

Employment situation of graduates with a major in human movement sciences

YAMILETH CHACÓN-ARAYA^{1,2}

¹Human Movement Sciences Research Center (CIMOBU), University of Costa Rica, COSTA RICA

²School of Physical Education and Sports, University of Costa Rica, COSTA RICA

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Abstract

The purpose of the study was to determine the employment situation of alumni who majored in Human Movement Sciences (HMS) at the University of Costa Rica. A survey was conducted on 59 alumni graduating between 2010 and 2015 to determine demographics, professional life and job stability and satisfaction. Participants were 37 men and 22 women. The mean age was 27.6 ± 3.1 yr. and their mean age upon graduation was 24.4 ± 2.5 yr. The proportion of men (73%) and women (54.5%) reporting part-time jobs while studying was similar ($\chi^2 = 2.1$; $p = 0.148$). Following graduation, alumni found a job within six months (52.5%), between six months and a year (16.9%), more than a year but less than two years (3.4%), and others held their usual work (20.3%). No gender difference was found in employment following graduation ($\chi^2 = 3.8$; $p = 0.428$), and all participants reported getting a job directly related to HMS. At the time of the survey, 91.5% respondents reported having a job. A significant proportion of women (81.8%) indicated having a job as opposed to those who did not (18.2%) ($\chi^2 = 4.3$; $p = 0.039$). Women reported a higher job satisfaction than men ($\chi^2 = 6.1$; $p = 0.047$). Men's opinions regarding job stability were more uncertain than women's opinions ($\chi^2 = 13.2$; $p = 0.002$). A high satisfaction was found concerning academic preparation; yet, some curricular changes were suggested.

Key words: survey, labor satisfaction, employment, unemployment, curriculum

Introduction

The United Nations Educational Scientific and Cultural Organization (UNESCO) consider Physical Education (PE) as a basic human right (United Nations Educational Scientific and Cultural Organization, 1978). That statement was ratified by the United Nations Children's Fund in November 2, 1989 (United Nations Children's Fund, 1989) advocating that every human being under 18 years of age has the right to play and to participate in recreational activities. For this reason, the World Health Organization declared 2005 as the International Year of Physical Education and Sports (The United Nations Organization, 2003). However, in general, the governments have not been giving sufficient support to this field. Furthermore, a reduction in PE class time has been reported in all elementary, middle and high school institutions (Hardman, 2004; Hardman & Marshall, 2000a, 2000b; Hardman & Marshall, 2001). This is happening in spite of the strong evidence indicating that PE relates to a better cognitive and academic performance (e.g., non-verbal and verbal ability, abstract reasoning, spatial ability, reading fluency, numerical ability) and promotes positive personal habits, which also benefits the health of the citizens (Arday et al., 2014; Ericsson & Karlsson, 2014; Haapala et al., 2014; Haapala et al., 2017). This situation has significantly affected the employability of PE and Human Movement Sciences professionals (HMS), who are directly responsible for planning, prescribing and executing physical activity programs in the population.

Universities not only must offer quality curricula to develop the necessary skills for their professional life, but also guarantee a workplace network for their graduates (Lavega, 2008). Majors related to education are not the exception. In Costa Rica, PE and HMS's graduate networking opportunities are little known based on what the State of the Nation Report 2012-2015 claimed (State of the Nation Report, 2012, 2015). Based on retrospective data, during 2000-2007 when graduate populations were studied, it was found that in 2007 only 18 PE graduates were unemployed (0.83%), 69 underemployed (3.2%), and 30 (1.4%) worked but in unrelated fields (State of the Nation Report, 2012). Recently, data indicates that 500-1000 graduates from universities in 21 different majors, including PE, showed negative employment indicators, that is, unemployed (10% or more), underemployed, or working in fields unrelated to their majors (Prendas, 2015; State of the Nation Report, 2015). To the best of our knowledge, 75% of Costa Rican schools do not offer PE, despite the fact that the Constitutional Chamber of the Court issued a mandate to the Ministry of Public Education (MEP for its acronym in Spanish) to teach PE from preschool to high-school (Moncada-Jiménez, 2014). To date, this mandate has not been fulfilled.

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A potential problem affecting PE or HMS students is the general thinking that this professional group should have a secure employment once they graduate, which is not necessarily true. In Seville, Spain, six PE alumni groups were analyzed (n = 292) (Campos Mesa, Romero Granados, & González Campos, 2010). Most respondents indicated they did not receive any labor or professional orientation during their major (95%), and some worked in an unrelated field (37%), which means that almost 40% of graduates did not obtain a job associated with their subject matter. In Cyprus, many PE alumni also work in unrelated jobs as well (Christodoulou, 2011).

HMS graduates' employment could be affected by their major's emphasis: generalists or specialists. By 2000, the employment panorama changed from hiring specialists to generalists (Banks & Wright, 2001; Suomi & Herbert, 1999). This overview was based on the developed of this major over a century. However, the pros and cons will remain unknown until some generations of graduates have passed. A generalist is defined based on at least three or more courses of theoretical/theory and practical knowledge (i.e., performance) courses while a specialist only needs one or two (Banks & Wright, 2001). As a consequence, the five most desirable employment categories from 1993-1999 were: a) PE teacher, b) physiology, c) biomechanics, d) sports administration, and e) generalist graduate (Banks & Wright, 2001). These findings were opposed to those reported previously from 1988 to 1992, in which the five categories with higher employment rates were: a) generalist graduate, b) physiology, c) PE teacher, d) coach, and e) school principal. The previous data, in a very short time shows that PE (or currently HMS) needs of graduates changed dramatically in the United States, moving from generalist to specialist professionals (Banks & Wright, 2001). Based on this, it seems that the employment market changed for PE (at least in USA) with the uncertainty of what will be the trend in other countries. For instance, Costa Rica, the labor market is only focused on being a teacher for elementary, middle and/or high schools, having fewer PE opportunities in colleges or universities; despite the fact that HMS graduates are able to work in teaching, research, recreational sports, sports training, and other health-related physical activities.

Labor opportunities would be increased due to accreditation processes applied to the curricula in the School of PE and Sports at the University of Costa Rica and the change of name of the degree program, from a Bachelor's Degree in PE Teaching Education (PETE) to a Bachelor's Degree in HMS. Nonetheless, the future of the HMS Bachelor graduates is uncertain in relation to being hired in their field, being underemployed or the worst-case scenario, being unemployed. Based on this context, this study is relevant since it offers a current employment vision for graduates, allowing the detection of weaknesses in the curricula and giving opportunities to suggest improvements to discover the real needs between what universities are offering and what employers seek (Lavega, 2008). Therefore, the purpose of the study was to describe the employment situation of the graduates in the last six generations of the HMS major at the University of Costa Rica.

Methods

Design and participants

This is a cross-sectional quantitative-descriptive study, in which participants completed a measurement instrument only once. The research was approved by the Scientific Ethics Committee of the University of Costa Rica and complied with the Declaration of Helsinki.

Previous evidence highlights the importance of analyzing at least two graduate generations to collect reliable information (Teichler, 2003). For this reason, it was considered necessary to have the last six years of graduation lists of the School of PE and Sports, including telephone numbers and email addresses. When no contact information was found, social networks were used (i.e., Facebook) in an attempt to locate potential participants, a methodology used before (Campos Mesa, Ries, & Del Castillo Andrés, 2011; Campos Mesa et al., 2010; Gallardo Vigil, 2006).

Instruments and procedures

To gather the necessary information, a survey was designed in *Google Docs* (<https://www.google.com/forms/about/>). The *Survey on the Employment of Teachers in Physical Education Graduated from the Faculty of Education at the University of Seville* (Campos Mesa et al., 2010) was used as a guide to elaborate the instrument. Experts provided content validity to the questionnaire (Campos Mesa et al., 2011; Gallardo Vigil, 2006). The participants were invited to complete the questionnaire via internet from June to November 2016. Demographic information was obtained in order to describe participants, employment categories (Banks & Wright, 2001), and relevant competence for their professional development (Bebie, 2012). Since this questionnaire was completed online, the data obtained was immediately transferred for their analysis.

Different steps were used for data collection. First, every graduate was contacted by telephone to explain the purpose of the study and to have the email address. Second, an email was sent and after a month, a reminder was sent (and a follow-up telephone call) to obtain the majority of surveys completed. This strategy was necessary to guarantee all emails were received and not filed automatically in the spam filter. Finally, collected data was transferred from *Google Docs* to the statistical program for their analyses.

Statistical analyses

All statistical analyses were made with the IBM SPSS, version 21.0. (IBM Corporation, New York, USA). Descriptive statistics were obtained for the continuous variables (Mean \pm SD) and percentages for the categorical variables. Non-parametric Chi² (χ^2) test was applied to compare distribution frequencies in categorical variables when necessary. The likelihood ratio test was used when frequencies were less than five per cell in the χ^2 test. Significance value was established *a priori* in $p \leq 0.05$.

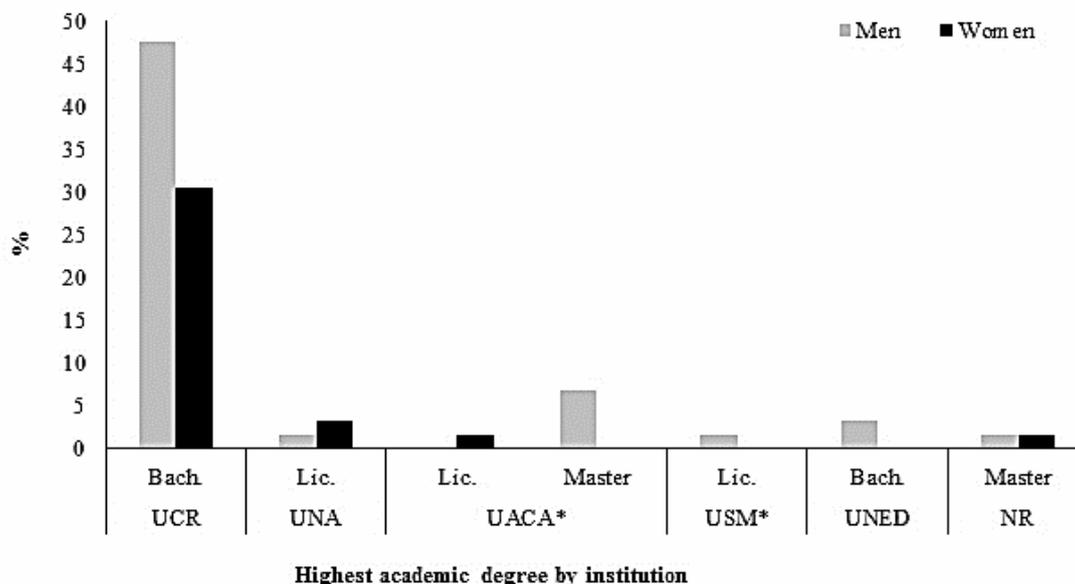
Results

A list of 382 graduates was provided from the School of PE and Sports. Most of the graduates did not have an updated telephone number nor an email. Due to these limitations, social networks were necessary to contact them. Finally, 59 participants were included, who completed the survey during the time allotted. The respondents were distributed in the following graduation cohorts: a) 2010 (n = 13; 22.0%), 2011 (n = 5; 8.5%), 2012 (n = 8; 13.6%), 2013 (n = 6; 10.2%), 2014 (n = 14; 23.7%), and 2015 (n = 13; 22.0%). For a better understanding of the results, the following sections are presented regarding participants: a) demographic characteristics, b) characteristics while studying, c) characteristics of professional career, d) job stability and satisfaction, and e) training received and future expectations.

Demographic characteristics. The mean age was 27.6 ± 3.1 yr. (minimum = 22, maximum = 42 yr.) and the mean age upon graduation was 24.4 ± 2.5 yr. (minimum = 21, maximum = 36 yr.). Participants included in the final analysis were 37 men (62.7%) and 22 (37%) women. At the time of the survey, men reported being single (89.2%), married (5.4%), and in consensual union (5.4%), and women reported being single (86.4%), divorced (4.5%), and in consensual union (4.5%). Based on information given by men, 54.1% did not have any dependents. Others had one (32.4%), two (8.1%), three (2.7%) and four dependents (2.7%). Most women indicated they did not to have any dependents (72.7%), while others had one (18.2%) or two (9.1%) dependents.

The highest degree obtained was the bachelor (78%), licentiate (15.3%), and master (6.8%). Gender analysis indicated that 75.7% of men had the bachelor degree, licentiate 21.6%, and master degree 2.7%, while in women percentages were 81%, 8.4%, 5%, and 13.6%, respectively. No differences between men and women were found in the proportion associated with the major obtained ($\chi^2 = 5.6, p = 0.061$). The distribution of highest major percentages by institution appears in figure 1.

Figure 1. Distribution (%) of the highest academic degree achieved and the institution where it was obtained, by gender, in graduates of Human Movement Sciences from the University of Costa Rica (n = 59). Note: Bach: Bachelor; Lic: Licentiate; UCR: University of Costa Rica; UNA: National University; UACA*: Autonomous University of Central America; USM*: San Marcos University; UNED: State Distance University; NR: No answer. * Private universities.



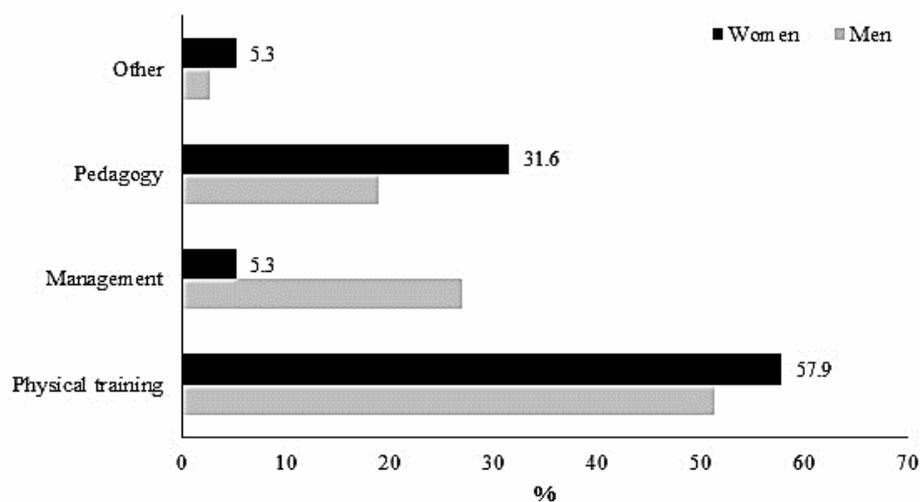
Characteristics of participants while studying. Respondents (66.1%) mentioned being employed while studying at the university. The proportion of men (73.0%) and women (54.5%) reporting having a job while studying was similar ($\chi^2 = 2.1; p = 0.148$). Men worked especially in fitness centers (40.7%), sports trainers (20.6%), personal trainers (11.1%), sports managers (7.4%), PE teachers (3.7%), recreational activities (3.7%),

and car mechanics (3.7%). Women worked as sports and personal trainers (33.3%), fitness center trainers (25%), swimming instructors (25%), dance teachers (8.3%), and preschool teachers (8.3%).

Characteristics of Professional Career. Alumni were hired less than 6 months following graduation (52.5%), between 6 and 12 mos. (16.9%), >12 and <24 mos. (3.4%), and others continued working in the same work they had while studying (20.3%). Others did not specify how long before they found a job (6.8%). In addition, the proportion of men and women getting a job was similar ($\chi^2 = 3.8$; $p = 0.428$). Furthermore, all respondents found a job directly related to PE once they graduated.

When participants took the survey, 91.5% were working while 8.5% were not. Gender analysis indicated that men (97.3%) and women were currently working (81.8%) ($\chi^2 = 4.3$, $p = 0.039$). Participants (86.4%) mentioned having a job directly related to their major, others did not (8.5%) or did not answer (5.1%). In general, alumni jobs were related to their major (men = 89.2%, women = 81.8%), some indicated having a job unrelated to their major (men = 10.8%, women = 4.5%), and some women did not answer (13.6%). Men working in unrelated fields included industry (e.g., sports apparel manufacture) (3.6%), office administration activities in the MEP (3.6%), and as university instructors (3.6%). Women worked in labors related to food processing (1.5% unspecified), studies abroad (1.5%), and pursuing a master's degree or another bachelor degree (1.5%). From those indicating a job related to their major, most reported working on physical training (e.g., personal trainer, fitness club instructor, sports team trainer, dance instructor, aerobic and other kinds of activity trainers, 51.8%), teaching (e.g., PETE in private or public schools, college or university, 23.2%), and sports managers (e.g., training and promotion of sports and health trainers, 21.4%), manufacturing (1.8%) and sales (1.8%). The main percentages of labor distribution are shown in figure 2.

Figure 2. Job category distribution (%), by gender, in graduates of Human Movement Sciences from the University of Costa Rica (n = 51).



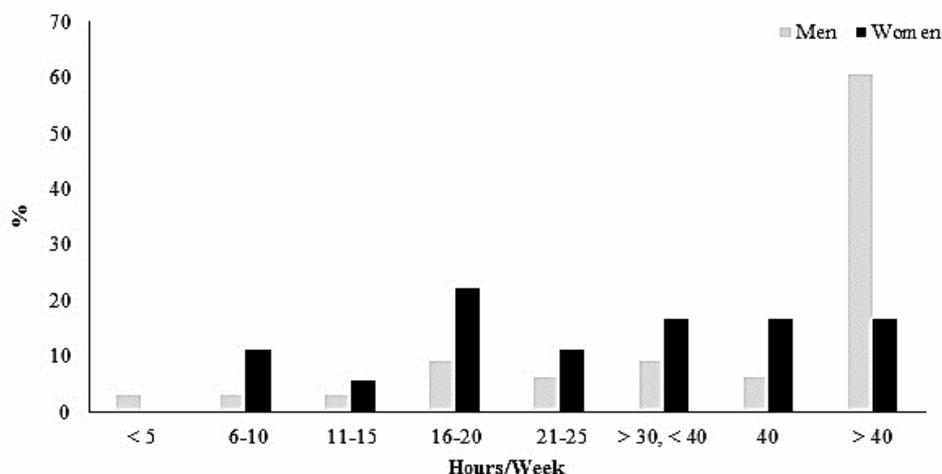
Work schedules in hours per week (h/w) showed that some graduates work >40 h/w (45.1%), from 16-20 h/w (13.7%), 40h/w (9.8%), >30h/w but <40h/w (11.8%), 40h/w (9.8%), 21-25 h/w (7.8%), 6-10 h/w (5.9%), 11-15 h/w (3.9%), and <5h/w (2%). No difference was found in gender proportions on schedule distribution in most of the categories ($\chi^2 = 11.2$; $p = 0.193$), except for >40 h/w, in which men showed a higher proportion than women ($p < 0.05$). The percentage distribution schedule appears in figure 3.

Participants reported having just one job (30.5%), others had one (40.7%), two (15.3%), three (5.1%), and >3 additional jobs (5.1%). Others did not answer (3.4%). Gender analysis indicated that 32.4% men had an additional job, 45.9% had one, 18.9% two, and 2.7% three more jobs. Women (27.3%) did not report additional jobs, 31.8% had one, 9.1% two, 9.1% three, 13.6% >3 jobs, and 9.1% did not answer. The proportion of men reporting having additional jobs was higher than women's ($\chi^2 = 12.7$, $p = 0.026$).

Job stability and satisfaction. Alumni indicated being very satisfied (71.4%) and just satisfied (26.8%) with their jobs, and 1.8% did not respond. Men felt very satisfied (64.9%) and a little dissatisfied (35.1%), while women felt satisfied (84.2%), a little dissatisfied (10.5%), and 5.3% did not respond. Women felt more satisfied with their jobs than men did ($\chi^2 = 6.1$, $p = 0.047$). Respondents indicated being a little unsatisfied (59.8%), very unsatisfied (31.6%), and very unsatisfied (8.8%) with their current salary. Men indicated being a little unsatisfied with their salary (59.6%), very unsatisfied (29.7%), and totally unsatisfied (10.8%), while women were a little unsatisfied (60%), very unsatisfied (35%) and totally unsatisfied (5%). A proportion of alumni (39.7%) earn more than the minimum salary set forth by the Costa Rican Ministry of Work and Social Security for professionals in PE or CMH. Other respondents (36.2%) indicated that their salaries were less than the established (36.2%), and others did not answer (24.1%). Men affirmed to earn more (38.9%) and less (38.9%)

than the minimum salary, and others did not answer (22.2%). Women indicated earning more (40.9%) and less (31.8%) than the minimum salary, and some did not answer (27%). Salary distribution between gender was similar ($\chi^2 = 0.4$; $p = 0.841$).

Figure 3. Schedule work distribution (%) in hours per week, by gender, in graduates of Human Movement Sciences from the University of Costa Rica (n = 51).



Concerning stability almost half of the alumni indicated having doubts of being there for a long time (49.2%), some totally agreed (35.6%), totally disagreed (10.2%) and some did not answer (5.1%). Gender analysis showed men having doubts (64.9) about their job stability. Some men totally agreed (29.7%) whereas others totally disagreed (5.4%). Women (45.5%) totally agreed, some had doubts (22.7%), and others totally disagreed (18.2%) about their job stability. A 13.6% did not answer. Men indicated having more doubts about job stability than women did ($\chi^2 = 13.2$; $p = 0.002$).

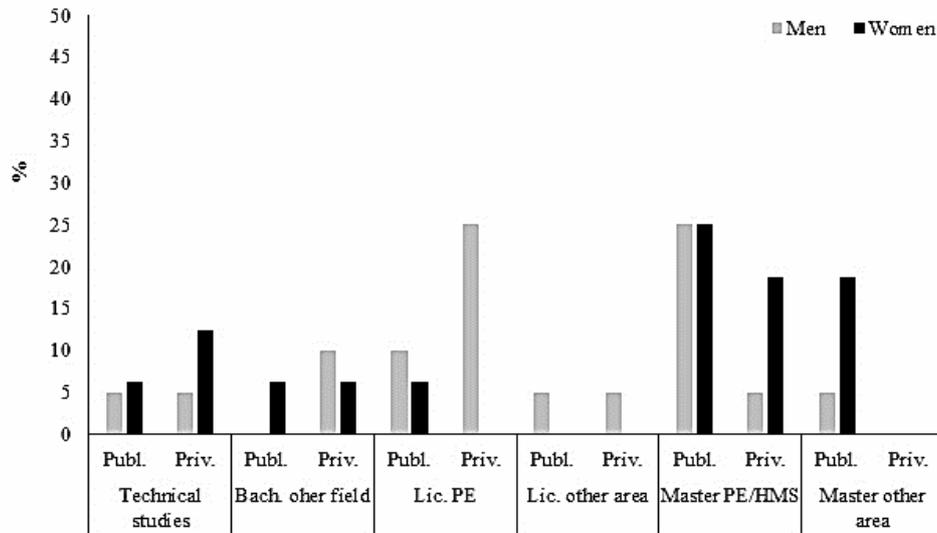
Curricula and future expectations. Facing the question about *how about the prestige of being graduated in HMS at the University of Costa Rica*, where 0 represented no prestige at all and 100, the highest, the mean response was 86.8 ± 16.0 (minimum = 30, maximum = 100). No difference in opinion between men and women was found (87.1 ± 14.7 vs. 86.3 ± 18.3 ; $p = 0.858$). Most of the sample considered that PE or HMS taught by University of Costa Rica the best in the country (93.2%) while others said that other universities offer better curricula (5.1%), and some did not answer (1.7%). Most of men (89.2%) and women (100%) believed that HMS is the best of the country; some thought that other universities offer better curricula (8.1%) and other did not answer (2.7%). No gender difference was found in opinions regarding curricula ($\chi^2 = 1.9$; $p = 0.164$).

Table 1. Study options for alumni from the Physical Education and Human Movement Sciences major of the University of Costa Rica (n = 59). Values are in %.

Response	Men (n = 37)	Women (n = 22)
Do not pursue further studies	43.2	22.7
A licentiate in PE	21.6	4.5
A master's degree in PE or similar	16.2	36.4
A master's degree in other field	0.0	13.6
Technical studies	5.4	13.6
A bachelor's degree in other field	5.4	9.1
A licentiate in other field	5.4	0.0
A master's degree in other field	2.7	0.0

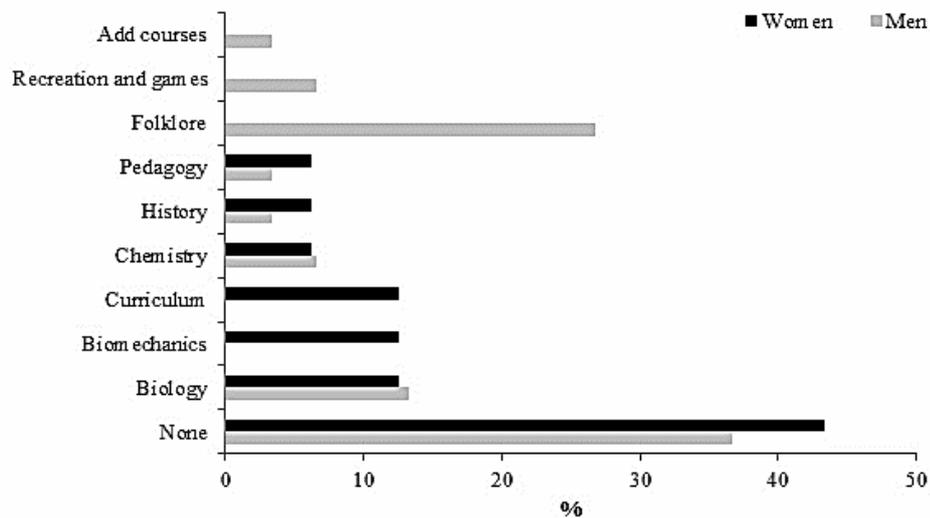
Some of the participants are still studying (35.6%), some study toward the PE master degree or similar (23.7%), and others toward PE licentiate (15.3%), technical studies (8.5%), other bachelors different from PE (6.8%), and licentiate different from PE or HMS (3.4%). Table 1 shows the different study categories between men and women. Figure 4 shows the information by institution (i.e., public and/or private) ($\chi^2 = 11.6$; $p = 0.071$).

Figure 4. Alumni graduate study options by gender and type of institution (n = 36).



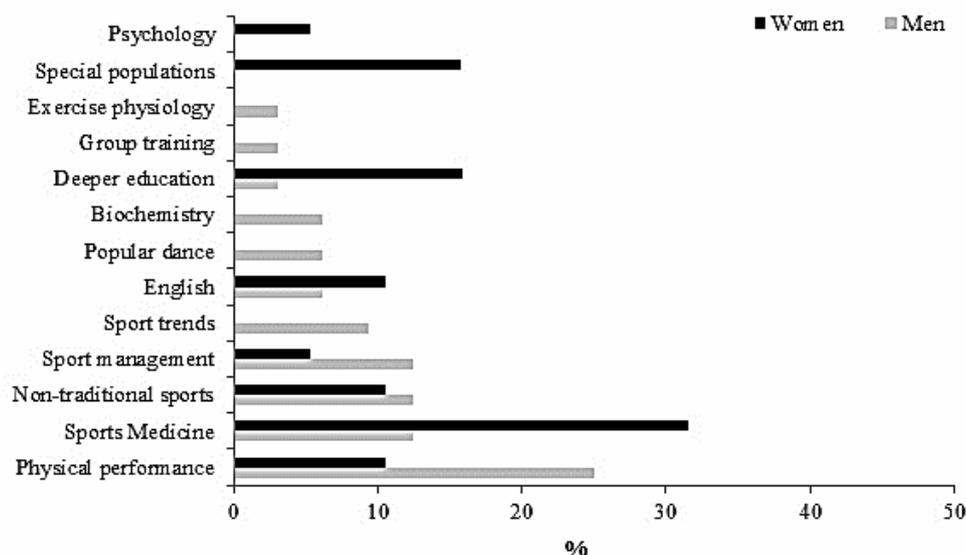
Alumni were asked about what courses they would eliminate from the existing curricula. Respondents answered that they would not take any course away (39.1%), others thought that they would suggest taking away folklore (17.4%), biology (13%), chemistry (6.6%), biomechanics (4.4%), curriculum (4.4%), history (4.4%), all subjects related to pedagogy (4.4%), recreational and games (4.4%). Some alumni responded that they would rather add more subjects (2.2%). Between gender responses were similar ($\chi^2 = 39.5$, $p = 0.538$) (Figure 5).

Figure 5. Graduates responses by gender about courses suggested to eliminate from the curriculum of bachelor degree in Human Movement Sciences of the University of Costa Rica (n = 46).



Alumni were asked about what courses they would add to the existing curricula. A 19.6% suggested adding courses related to sports medicine (e.g., injury treatment, physical therapy, exercises for people with pathologies), 19.6% courses in exercise performance (e.g., resistance training), 11.8% teaching and training in non-traditional sports (e.g., martial arts, racquetball, chess, extreme sports, badminton, aquatic polo). A 9.8% would add courses on sport management (e.g., sport law, entrepreneurship, project and/or planning management), 7.8% English courses, 7.8% suggested deeper study in the current courses, and 5.9% would add courses related to special populations (e.g., elderly, early stimulation). Other alumni suggested including subjects focused on the new sports tendencies (e.g., functional training, Zumba® dance, indoor biking), 3.9% popular dance courses, 3.9% biochemistry, 2% group training, 2% exercise physiology, and 2% psychology. Proportions by sex are shown in figure 6 ($\chi^2 = 50.98$, $p = 0.474$).

Figure 6. Graduates responses by gender about courses suggested to include to the curriculum of bachelor degree in Human Movement Sciences of the University of Costa Rica (n = 51).



Discussion

In this study, we determined the employment situation of alumni who majored in HMS at the University of Costa Rica. The main finding was that the alumni employment rate was above 90%. Women reported higher job satisfaction than men, who also had higher job stability uncertainty than women.

Regarding the situation of this professional group in Spain, it was found that over six generations of graduates in PE there were 49% unemployed when a survey was applied (Gallardo Vigil, 2006). Where information technology and time management skills were part of the curricula, results were lower between those who do not have job and those who do. Conversely, in Poland, 90% graduates have employment and some of them have an additional job (33%), probably due to the economic situation in the country (Skiert & Buchta, 2008). A study in Valencia, Spain (Campos Izquierdo, 2005), among 588 PE graduates found that most men (58.5%) worked in PE related fields compared to women (41.5%); values proportionally similar to those found in another Spanish city (Gallardo Pérez & Campos Izquierdo, 2011). Campos Izquierdo (2005) found that the majority of hired people (63.9%) was under 30 yr. old (52.4%), between ages 20-29 and fewer were older than 44 yr. (9%). Furthermore, jobs were different by genre. For example, men (80%) were more associated to sports teams or individual athletes, sports activity planning, and personal training. On the other hand, women (60%) had jobs related to teaching, physical training, and sports recreational activities (Campos Izquierdo, 2005). These findings were similar to others (Gallardo Pérez & Campos Izquierdo, 2011), in which most of men (90%) were team or individual coaches for competition while women were more associated to PE teaching and aquatic rescue. In a study including 28 PE professionals in USA (Bebie, 2012), 15 (62%) were working in PETE and 13 (54%) were not, and the mean teaching length was seven years. From the total, 28% worked in jobs unrelated to PE. PE graduates are optimistic about their future. It has found that 51% are interested in their professional future (Madejski, Kosiba, & Majer, 2010). In general, they feel that being at the university was a good experience and they are well prepared to work on PETE applying game as didactic resource and in teaching (Bebie, 2012; Campos Mesa et al., 2011). Nonetheless, they consider the need for more education and training in technology use and in enhancing other courses contents (Bebie, 2012). However, interpersonal skills seem to be the criteria for hiring over teaching skills (Dillon, McCaughtry, & Hummel, 2010), suggesting that not only the knowledge is valued but also the personality. Finally, other threats affect PE and/or HMS professional hiring such as illegal professional activities. For instance, in Spain it was found that most people (42.5%) working in PE related activities did not have any degree, and only 57.1% did have it in PE (Gallardo Pérez & Campos Izquierdo, 2011).

Conclusion

There is a low unemployment rate of alumni majoring in PE and HMS from the University of Costa Rica. Women showed higher job satisfaction and were more optimistic about keeping their jobs than men.

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