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Concussions in female semi-professional soccer players

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A brief survey was conducted on the members of the NY Metropolitan Women's League in order to identify possible risk factors, long term effects, and rates of concussions in the women's semi-professional soccer community. Data was collected over a three-month span in the Fall 2015 season of the NY Metropolitan Women's Semi-Professional Soccer League. Data collection is set to continue in the Spring 2016 season. This cross-sectional study obtained data from 35 individuals. From our participants, 25 (78.1%) reported that they had suffered from concussions during their career. While some subjects have not suffered a concussion, several individuals (n=5) cited that they had suffered five or more concussions in their career. The average number of concussions per person in our study was 2.6 (range 0-10). The average age of our population was 27.9 years (range 18-49 years) with an average of 21.875 years of experience. The majority of our population (68.8%) played a single position while the remaining subjects cited that they played in several positions, midfielder + forward being the most common combination. Most of our subjects were former collegiate players (46.9%). On average each player did 5.34 headers (range 0-15+ headers) per game. Average hours spent in practice or gameplay per week were 2.97 hours and 3.33 hours respectively (range 0-15 hours, range 1.5-9 hours). Preliminary data analysis between concussed and non-concussed populations indicates that concussed individuals are more likely to be older (28.44 vs 26), have more playing experience (22.56 years vs 20 years), more practice (3.58 hrs/wk vs 3.11 hrs/wk), currently have less game time (3.16 hrs/wk vs 4.1 hrs/wk), do more headers (5.58 vs 4.2), and are more likely to have played collegiate, semi-professional, and professional soccer. Further analysis of the data revealed that midfield positioned players suffer less concussions (58.3%) than other positions (defense 85.7%, forward 100%, combined positions 80%). Greater amounts of practice (2.5+hours or more) and game play (3+hours or more) also appear to correlate with higher rates of concussion. In this cross-sectional study, several potential risk factors were identified to correlate with rates of concussion. Midfield positioning in particular, appeared to demonstrate some protective characteristics. Dedicated midfield players were less likely to have suffered a concussion than any other single or combined position. While this conflicts with data presented by Giza et al, the difference between our studies is likely due to a focus on general injury in the midfield player population. The midfield position may also be protective to head injuries as this position highlights skills such as short passing and sending long crossed balls, both which are skills that do not require aerial positioning. In addition to position on the field, we also found that greater than 2.5 hours spent training and greater than 3 hours in game play showed positive but not statistically significant correlations to rates of concussion (p=0.48). As demonstrated by Boden et al, player to player interactions were the most common cause of head injury in soccer and it comes to no surprise that increasing training time and game play has a similar effect on concussion rates in our study. While increased practice and game play is unavoidable, the protective effects of the midfield position may highlight other skills which are protective for all women's soccer players and should be more closely examined in the future.

Biography

Kirill Alekseyev has completed his MBA from St. Joseph's College after completing his undergraduate studies at Stony Brook University in Long Island, NY as a Division I student athlete. He then went on to pursue his MD at American University of Antigua. He is currently a 2nd year resident Physician at Kingsbrook Rehabilitation Institute in Brooklyn, NY. He is the Vice President of the resident's committee at NY Society of PM&R (largest PM&R Society in US) with an option to be President next year. He is also a Special Olympics Coordinator for the past 3 years. He has published chapters, articles in various journals, books and databases. He has over 20 poster and oral presentations at various national conferences. He is a recipient of NY Society of PM&R recognition award in 2014 and this year's recipient of Professionalism award from his current Residency Program at Kingsbrook Rehabilitation Institute, Brooklyn, NY. He was a runner up for Vice Chair position for residents at Association of Academic Physiatrists (AAP) second largest PM&R national organization.

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