2024-2025 School of Exercise and Nutritional Science Student Research Grant Report

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Title: Dietary Practices, Eating Attitudes, and Sleep Quality Among Pre-professional and Professional Circus Artists: A Cross-Sectional Study

Purpose: Circus arts combine athletic ability with artistic components, requiring elite-level training and performance. Despite the physical demands of circus arts, little is known about circus artists' dietary practices. This study examined dietary intake, eating attitudes, and sleep quality among pre-professional and professional circus artists.

Methods: Thirty-two female and one male circus artists completed three-day food records using the Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24). Eating disorder risk and sleep quality were assessed using the Eating Attitudes Test (EAT-26) and Pittsburgh Sleep Quality Index (PSQI), respectively.

Results: All participants reported extensive circus experience (52% trained 10+ years) and trained 5-15 hours weekly (88%). Among female participants, while 81% met minimum energy requirements ((≥30 kcal/kg)), 91% failed to meet common carbohydrate recommendations (5-7 g/kg, mean intake 3.6 ± 0.9 g/kg) and 84% exceeded recommended fat intake (20-35% of total energy, mean 41 ± 5%). Significant micronutrient deficiencies were observed for vitamin D (91% below recommendations), potassium (56%), vitamin E (47%) and calcium (31%), while 88% exceeded sodium recommendations for the general public. Sixteen percent of participants scored above the clinical threshold for eating disorder risk, with EAT-26 scores negatively correlating with energy intake (rho = -0.415, p = 0.018). One-third were classified as poor sleepers, with age positively correlating with poorer sleep quality (rho = 0.513, p = 0.003).

Conclusion: Current dietary practices among circus artists as a group may not optimally support their training and performance demands, with insufficient carbohydrate and excessive fat intake, alongside inadequacies in vitamin D, calcium, Vitamin E, and fluid intake. These findings provide a foundation for developing targeted nutrition interventions for this unique athletic population, emphasizing the need for macronutrient rebalancing, micronutrient adequacy, and monitoring of eating attitudes and sleep quality.