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The Association of Physical and Sociocultural Components of Athletes in Sports Development in the Context of Human Ecological Perspective: A Review

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Abstract: Adolescence constitutes a pivotal phase marked by physical advancement, growth, and overall maturation, rendering it a crucial focus in examining the circumstances surrounding young athlete engagement in sports and the identification of environmental elements impacting their performance. The attainment of success in athletic development involves a confluence of factors spanning physical, psychosocial, and interpersonal domains, thereby emphasizing the pivotal role of interactions between athletes and their environments in shaping the sporting outcomes of the athlete's. The existing research underscores the significance of fostering young athletes' autonomy and enhancing their physical and emotional well-being by promoting an environment conducive to athletic talent development. In this study an effort has been made to provide a comprehensive review of recent literature spanning the period from 2015 - 2020, exploring the impact of physical and sociocultural determinants, body image considerations and the provision of autonomy support on the athletic performance of adolescent competitors.

Index Terms - Adolescent Athletes, Sports Development, Sociocultural Development, Autonomy support, sports career, human-environment interactions.

I. INTRODUCTION

Human ecology examines the dynamic relationships between individuals and their environments, including social, cultural, economic, and physical factors. In sports, this perspective helps understand how athletes interact with their surroundings. Insights from Boyden's notion of universal human health needs, emphasizing elements like belonging, challenges, self-fulfilment, and companionship, have influenced this review (Boyden, 2016). The study aligns with holistic and ecological models in athletic development, focusing on broader developmental contexts, as advocated by Henriksen and Stambulova (2017).

Adolescence is a critical phase marked by physical growth, sexual development, and skill refinement, with adolescent athletes undergoing specialized training for many hours weekly, and engaging in competitions at various levels (Sabato *et al.*, 2016). Athletes are viewed as multidimensional entities with roles spanning micro, meso, and macro levels within a system. Models like the Athletic Talent Development Environment (ATDE) ecological model emphasize social interactions within and beyond sports, recognizing the broader context in which athletes operate (Henriksen *et al.*, 2010).

The Dual Career (DC) model addresses balancing sports and education, with the Dual Career Development Environment (DCDE) model focuses on supporting student-athletes across athletic, academic, and personal domains (Henriksen *et al.*,2020). DCDE classification models vary globally, tailored to local contexts in Europe and Canada (Morris *et al.*, 2021; Way *et al.*, 2010). Quality interpersonal relationships within sports environments provide social support and foster resilience against stressors (Tamminen *et al.*, 2016). Parents, peers, and authorities in ATDEs are crucial for nurturing athletes' holistic development, impacting their adaptability and sporting performance (Holt *et al.*, 2018). However, there's a lack of such classifications in India and elsewhere, requiring further diagnostic information and adaptive interventions in psychosocial and cultural contexts. Youth sports offer significant benefits for fitness, cardiovascular health, and promoting gender equity among boys and girls. However, more longitudinal studies are needed to understand the social and health impacts, especially considering gender differences in participation. In India, policies like the National Youth Policy (2014) support youth sports through infrastructure development and school facilities. The national adolescent strategy- Rashtriya Kishor Swasthya Karyakram (RKSK, 2014) emphasizes peer-based learning and leadership for resilience and health improvement. Despite their potential, there's limited evidence on the actual impact of sports participation.The positive impacts on physical health, mental well-being, academic performance, social skills, personal development, and career opportunities (Kumar, 2018). This study aims to review recent literature on how physical and sociocultural factors, body image perceptions, and autonomy support influence the sports performance of adolescent athletes.

II. MATERIAL AND METHODS

This comprehensive literature review focuses on the social and cultural dimensions within sports environments. Specifically, it investigated the motivational climate and autonomy support, as well as physical factors such as body image perception, and their implications for the sports performance of adolescent athletes. A systematic search for relevant scientific articles published in English was conducted, utilizing databases including EBSCOHOST, ScienceDirect, PUBMED, and Google Scholar for article retrieval. Initial screening involved examining titles and abstracts, followed by a thorough review of the entire article if it met the inclusion criteria. Total 45 articles were selected under 21 articles were reviewed.

III. RESULTS

Sl. No	Author	Journal	Sample	Tools used	Findings
1	Oja and Piksoot (2022)	International Journal of Environmental Research and Public Health, 19(10);6235	1033 6th-grade students from 52 schools in Estonia	A self-structured questionnaire	Physically active students possess greater knowledge of sports and physical activity. Additionally, students engaged in organized sports training experience significant positive outcomes from regular physical activity, perceiving it as vital for maintaining their health.
2	Gjaka *et al. (*2021*)*	PlosOne, 16(1)	115 parents (49 female, 66 male) of athletes aged 14 to 23 from France, Ireland, Italy, Portugal, and Slovenia.	Cross-national qualitative research	The development of effective education strategies for supporting dual career athletes, ensuring an optimal environment for successfully balancing high-level sports and educational pursuits.
3	Bhan *et al. (* 2020*)*	eClinicalMedicine, 20, 100302	2,322 unmarried adolescents (wave 1) and were followed in the UDAYA study 2015-2016 (wave 2).	Economic engagement, social and political participation, marriage marital violence (MV), and contraceptive use among married individuals.	Gender differences in sports benefits, highlighting the need for further research. It also suggests exploring how programs like RKSK in India can use sports to empower youth and foster resilience.
4	Dohsten *et al. (*2020*)*	Sports Coaching Review, 9(1); 48-70	were purposive sampling of 17 coaches.	Semi-structured interviews	A caring coaching approach has a dual impact on elite sports sustainability.
5	Sabiston *et al. (* 2020*)*	Psychology of Sport & Exercise, 48;101669	13 coaches with an average of 10 years of experience working with girls in primarily non-aesthetic team sports.	A semi-structured interview guide was developed to discuss body image in girl's sports.	Potential areas within the sporting environment that could be addressed to enhance body image and consequently improve the overall sport experiences for young female athletes
6	Mosqueda *et al.(* 2019*)*	Sports, 7(6), Article 153	The sample consisted of 71 elite male volleyball players of age 14-18 years from six countries.	The Empowering and Disempowering Motivational Climate Questionnaire-Coach (EDMCQ-C)	A significant positive relationship between the perception of an empowering climate, autonomous motivation, and enjoyment. The mediation model revealed that autonomous motivation mediates the relationship between the perception of an empowering climate created by the coach and the enjoyment reported by the athletes
7	Soullard *et al. (*2019*)*	Body Image, 28, 93–100	254 undergraduate students between the ages of 18 and 38 from a National Collegiate Athletic Association (NCAA) private university in the Midwestern United States	Body Appreciation Scale-2 (BAS-2), Functionality Appreciation Scale (FAS), Dispositional Flow Scale – 2 (DFS-2), Trait Sport-Confidence Inventory (TSCI) and Subjective Performance Questionnaire (SPQ)	Significant relationships were found between positive body image and the sport-related variables, it also contributes novel findings to the positive body image and potential implications for coaches
8	Agata and Monyeki (2018)	International Journal of Environmental Research and Public Health, 15(12):2793.	Cross-sectional data were collected from 238 adolescents (90 boys, 148 girls) enrolled in the Physical Activity and Health Longitudinal Study.	BMI and an International Physical Activity Questionnaire Short Form and Social Support for Physical activity	The findings offer insights into the associations between organized sports participation, body composition, physical fitness, and changes in social support among adolescents.

9	Moseid *et al.* *(*2018*)*	Scandinavian Journal of Medicine &Science in Sports, 28(4), 1412–1423	The study included 260 elite sport athletes (average age 16.2 years) from various Sport Academy High Schools in Norway,	Oslo Sports Trauma Research Centre (OSTRC) questionnaire to self-report injuries and illnesses over a period of 26 weeks	The impact of health problems varied based on sport type rather than the DCDE. Endurance sport athletes experienced more emotional distress but fewer injuries compared to those in technical disciplines and team sports. Athletes in sport schools reported more injuries due to training volume, resulting in reduced training.
10	Lindgren and Ruchti (2017)	International Journal of Qualitative Studies on Health and Well-Being, 12(2)	Five Swedish women's national football team coaches	in-depth interviews following life-history principles, allowing participants to reflect on their lives.	These findings demonstrate how coaches can prioritize caring, holistic, athlete-centered coaching while achieving competitive success at the highest level of sports.
11	Lunde and Gattario (2017)	Body Image, 21;81–89.	Six focus groups from Sweden were conducted with female sports participants (N = 25).	An interview questionnaire prepared by the researcher was adopted.	The results of this study suggest that young female athletes encounter intricate, unclear, and limiting social expectations and beliefs within the realm of sports.
12	Ryba *et al.* *(*2017*)*	Psychology of Sport and Exercise, 33;131–140	Ten female and eight male elite junior athletes, aged 15–16 at baseline,	interview method from Finnish Longitudinal Dual Career Study and qualitative data adopting interview	Dual careers significantly influence young athletes' aspirations. However, diversifying success stories can empower athletes to envision achieving excellence through various avenues and take action.
13	Beckner and Rachael (2016)	Health Communication, 31(3);364–373	28 female athletes who (18-23 yr)were current members of varsity sports teams	Interview method	This study emphasizes the crucial influence of coaches on female athletes' health choices and body image amidst the dual pressures of societal thinness ideals and athletic demands. It highlights coaches as key figures in athletes' lives, with the potential to significantly impact their health decisions and body image perceptions
14	Giel *et al.* *(*2016*)*	International Journal of Eating Disorders, 49(6), 553–562	with a sample of 1843 athletes from 51 different sport disciplines	Cross-sectional quantitative study using Body Mass Index (BMI), Frankfurt Body Concept Scales (FKKS), Patient Health Questionnaire-4 (PHQ-4, Structured Inventory for Anorexic and Bulimic Disorders (SIAB-S), and SCOFF scale	The heightened psychosocial burden observed in athletes with eating disorder pathology highlights the necessity to not regard eating disorder symptoms as a routine or functional aspect of elite sports. Managing and preventing eating disorder pathology is particularly critical in weight-dependent sports
15	Eime *et al.* *(*2015*)*	BMC Public Health, 15:434	3,400 individuals aged 15 years and above from Exercise, Recreation and Sport Survey (ERASS) 2010	Quarterly survey using Computer-assisted Telephone Interviewing.	The intricate relationships between socioeconomic status (SES) and location across various participation contexts.
16	Kang *et al.* *(*2015*)*	Perceptual and Motor Skills, 120(1), 288–303.	645 adolescent athletes from different schools a pool of 24 middle and high schools specializing in sports nationwide	Stratified sampling and survey method using Korean Sports Parental Support Scale (2011), the maximum Likelihood Method (MLM), and the Inventory of Parent and Peer Attachment–Revised (IPPA–R. 1987)	The findings revealed significant impact of both parental social support and attachment on self-esteem, with attachment showing a stronger influence. While direct effects of social support on self-esteem were weak, indirect effects through attachment were substantial.
17	Kristiansen and Houlihan (2015)	International Review for the Sociology of Sport 1–23	35 participants representing athletes, coaches, parents, and sport school managers.	Interview schedule prepared by the researcher was used	The analysis highlights the interplay between structural factors and individual agency in policymaking, suggesting governmental inaction

					has fuelled the proliferation of sports schools, reinforcing a commercialized elite sports system.
18	Kong and Harris (2015)	The Journal of Psychology: Interdisciplinary and Applied, 9(42)	320 females aged between 17 and 30 years,	Eating Attitudes Test (EAT-26) 1979, and Figure Rating Scale (FRS) by were used.	The findings hold significant implications for identifying risk factors associated with eating disorders among female athletes. Specifically, athletes competing at an elite level, as well as those involved in leanness-focused sports across all levels, appear to be at a heightened risk for developing eating disorders.
19	Rajaraman *et al.(*2015*)*	Journal of Physical Activity and Health, 2015, 12, 931 -941	Thirteen South Asian adolescent boys and girls of different nutritional status and socioeconomic status in rural and urban India and urban Canada.	SES scale and anthropometric measurements	In India, academic achievement was prioritized, while Canadians focused on health benefits. Friends, family, and teachers had mixed roles in supporting physical activity. Urban teens faced limited play spaces, with academic pressures and sedentary habits as common barriers. Indian girls faced societal constraints and showed less interest in physical activity than boys.
20	Slater and Tiggeman n (2015)	Journal of Adolescence 34(3);455–463	714 adolescents, with 332 girls and 382 boys, aged between 12 and 16 years	Teasing while playing sport, Body Surveillance Scale, Body Shame Scale	A higher participation rate in organized sports among adolescent boys compared to girls. The study suggests that coaches should foster supportive environments that prioritize athletes' physical functionality over appearance.
21	Conroy and Coatswort h (2007)	Psychology of Sport and Exercise, 8(5);671-684	A total of 165 youth participating in a recreational summer swim league	The study design was non-experimental. Over a 6-week season, youth (N=165) completed measures of perceived coaching behavior (weeks 1 and 5), autonomy-supportive coaching (week 5) and psychological need satisfaction	Autonomy-supportive coaching should be evaluated as a potential source of motivational consequences of coaching and as a potential moderator of coaching effects on youth internalization.

IV. DISCUSSION

When evaluating psychosocial factors impacting young athletes, understanding societal and cultural contexts is crucial in sports psychology. Studies on Athlete Transition Development Environments and Dual Career Development Environments by various scholars highlight the influence of interpersonal relationships shaped by sports dynamics. This research provides valuable insights for implementing strategies tailored to the following ways;

a)Analyze diverse sports communities for personalized athlete attention, b) Help athletes manage both sports and non-sports-related stressors, c) Tailor talent selection strategies for optimal outcomes, d) Provide athletes with technical knowledge for well-being management and educate associated social agents e)Recognize and value insights from retired athletes, f) Collaborate with parents for effective athlete support strategies g) Establish flexible educational programs connecting sports committees and schools h) Conduct regular research to analyze challenges and offer tailored solutions i) Implement support programs for athletes post-university j) Advocate for funding and development of sports centers for talent nurturing.

V. CONCLUSION

This study aims to explore how physical attributes and sociocultural factors impact adolescent athletes' sports performance positively. To address challenges effectively, contextualized scientific evidence is crucial. Human ecological models enable analysis of athlete-environment interactions. Adolescent athletes face various stressors, affecting their well-being, making their protection a top public health priority. Thus, adopting human ecology-based strategies is essential to address these concerns effectively.

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