

CliftonStrengths® in Sports: Athletes and Coaches from the High School to Olympic Levels

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The CliftonStrengths® assessment has demonstrated merit across a variety of contexts. However, research involving the intersection of strengths and sport is sparse. This is the first study to examine the prevalence of strengths in athletes and coaches (N = 1,516) from college, high school/club, and Olympian/USA team/professional teams. Participants completed the standardized online CliftonStrengths® assessment independently, received their personalized reports identifying their top five signature strengths, and voluntarily shared their results with the researchers for database inclusion and future analysis. This study also compared the prevalence of each strength to a general public sample of 12.5+ million individuals. The top five signature strengths among athletes were: Restorative, Achiever, Adaptability, Competition, and Strategic. The top five signature strengths among coaches were: Achiever, Restorative, Learner, Relator, and Responsibility. It was notable to find Restorative as the highest-ranking strength among all types of athletes combined, and when comparing the combined athlete and coach sample to the general public sample, there was a much lower ranking of the Input strength (for athletes and coaches) and the Responsibility strength (specifically for athletes). These findings are discussed and recommendations for future research are provided.

Keywords: CliftonStrengths®, strengths, Olympian, sport coaching, athlete development


There is a robust body of literature demonstrating the importance of strengths (e.g., Ghielen et al., 2017; Lavy, 2019; Miglianico et al., 2020; Schutte & Malouff, 2019). However, only a handful of studies have examined how strengths are represented among groups (e.g., Allan et al., 2019; Gallup, 2016). Further, the literature involving the intersection of strengths and sport remains limited. Thus, the purpose of this study was to better understand strengths in the sport context by examining the prevalence and descriptive statistics of CliftonStrengths® among athletes and coaches across different competition levels and sport types, as well as between-group comparisons of strengths patterns.


Theoretical Framework


This study utilized the CliftonStrengths® (formerly known as StrengthsFinder®, and Clifton StrengthsFinder®; Asplund & Harter, 2023). Under this model, strengths are defined as “naturally occurring patterns of thought, feeling, or behavior that can be productively applied” (Hodges & Clifton, 2004, p. 257). The CliftonStrengths® includes 34 possible strengths (see Table 2 for the

full list of CliftonStrengths®). These strengths are organized into four domains: Executing (accomplishing tasks), Influencing (taking charge), Relationship Building (building teams), and Strategic Thinking (analyzing information; Gallup, 2022b).

The CliftonStrengths® model and measure were deemed particularly relevant to the sport context for several reasons. First, it was designed to identify strengths that can be enhanced and used to pursue positive outcomes (Asplund & Harter, 2023), which aligns well within a sport context where performance optimization is a predominant goal (Williamson et al., 2022). Second, it also emphasizes the value of applying one’s natural talents to a task and continuing to foster the growth of those talents through knowledge and skill development (Asplund & Harter, 2023). This mirrors commonly used sport training approaches and aligns with the talent development framework in sport (Côté & Vierimaa, 2014). Third, while other strength measures, like the VIA Character Strengths Survey, focus on character virtues, the CliftonStrengths® emphasizes action-oriented talents and optimal performance (Asplund & Harter, 2023), aligning with common sport objectives. Lastly, at the time of data collection, there was no peer-reviewed literature providing quantitative analysis of CliftonStrengths® results among athlete and coach populations, representing a significant gap in the literature. This gap, combined with the growing literature on positive psychology in sport (Mann & Narula, 2017), made it a worthwhile tool to use in this study.

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Strengths and Sport

A strengths-based approach has a natural fit in sport contexts, where athletes and coaches strive to identify, develop, and maximize individual and collective capabilities to enhance performance outcomes (Mann & Narula, 2017). Athletes who have the opportunity to identify and use their strengths engage in their sport with more purpose and intention (Stander et al., 2017). The applications of strength can lead to enhanced mental toughness and greater performance outcomes (Golby & Sheard, 2004) and help athletes intentionally mobilize their strengths to overcome various types of obstacles (Robles, 2012). Athletes might also use their signature strengths to enhance their mental skills and identify multiple pathways to enhance their performance and psychological readiness (Golby & Sheard, 2004; Williamson et al., 2022).

Coaches who know their own personal strengths are often more self-aware and tend to lead their teams authentically (Dworak & Pieper-Olson, 2007). Coaches also tend to better navigate potential differences in their coaching approach and feedback style when they understand both their own strengths profile and those of their athletes (Lorimer & Jowett, 2009). Past research also supports the specific use of the CliftonStrengths® with coaches. In a qualitative study of National Collegiate Athletic Association (NCAA) coaches, participants completed the CliftonStrengths® assessment and a 3-4 hour strengths development workshop (Robles, 2020). Following the intervention, coaches who utilized a strengths-based approach found personal value in discovering their individual strengths; it positively influenced their own coaching efficacy, self-awareness, and their understanding of how to coach each player more effectively (Robles, 2020). Coaches also perceived that their athletes found value in gaining confidence in their individual abilities, and the team experienced an improvement in overall chemistry. Results of this study also suggested using a strengths-based approach helped improve communication, appreciation for individual differences, and enhanced cohesion by affirming individual strengths and contributions (Robles, 2020).

Beyond these practical benefits, a strengths-based approach also aligns with key psychological characteristics and theoretical frameworks central to sport. Regarding psychological characteristics, resiliency and mental toughness are of particular relevance (Golby & Sheard, 2004). Early research found that psychological resilience was a critical factor in the development of optimal sport performance among Olympic champions, particularly in how athletes experienced demanding situations and navigated stress during adversity (Fletcher & Sarkar, 2012). Building on this work, Howells et al. (2017) identified that the ability to harness resiliency was central to athletic success. They found that athletes have the potential to benefit from challenges, a process they defined as “growth following adversity” (p. 117), which has attracted increased attention from sport psychology scholars. More recently, psychological resiliency has emerged as a defining characteristic of successful athletes (Chrétien et al., 2024).

While somewhat related to resiliency, mental toughness focuses on an athlete’s ability to consistently perform at high levels despite challenges and adversity (Gucciardi et al., 2017). Research has shown that mental toughness is associated with beneficial behaviors (e.g., perseverance) and enhanced sport performance (e.g.,

achievement [Stamatis et al., 2020]), helping athletes to work toward their goals (Jones & Parker, 2019). Given the importance of resilience and mental toughness in sport, CliftonStrengths® themes, particularly those involving problem-solving (e.g., Restorative®) and adaptive thinking (e.g., Adaptability®, Strategic®), may be especially relevant for understanding how athletes navigate challenges and develop psychological resilience in sport contexts.

Self-determination theory (SDT; Ryan & Deci, 2000) is one of the most widely applied motivational frameworks in sport psychology (e.g., Hagger & Chatzisarantis, 2007; Meany, 2023; Zhang et al., 2024). SDT proposes that individuals are most motivated when their needs for competence, autonomy, and relatedness are satisfied. Identifying one’s strengths may enhance perceived competence by helping athletes recognize areas where they naturally excel, support autonomy by encouraging development that aligns with authentic talents, and foster relatedness through a better understanding of how individual strengths impact team functioning. Additionally, research on achievement motivation suggests that goal setting is widely applied in sport and consistently associated with enhanced motivation and performance (Williamson et al., 2022). Athletes who may naturally incline toward achievement and discipline – characteristics found in several CliftonStrengths® themes within the Executing domain – may be uniquely receptive to structured goal-setting approaches.

The relatedness component of SDT is particularly relevant when considering team contexts. Team cohesion in sport is defined as a dynamic process that reflects the intensity of the groups’ efforts to stay united in pursuit of goals or to meet the affective needs of members (Khorrām, 2022). Effective team cohesion is often an important predictor of both team performance and athlete satisfaction (McEwan, 2020). Eys et al. (2015) found that team cohesion was perceived as more important for females than males on sport teams, and female athletes were more likely to perceive a sports performance as successful if they considered their team as functioning as a cohesive group. These findings suggest that strengths related to relationship building (e.g., Harmony®, Empathy®, Relator®) may manifest differently based on gender. Understanding potential gender differences in strengths profiles could provide insights into these differences in team dynamics.

Gender differences also extend beyond team dynamics to coaching and leadership contexts. Murray et al. (2018) found that female coaches scored higher on relationship quality than male coaches, while women remain significantly underrepresented in sport leadership positions (Harvey & Price, 2021), particularly at elite sport levels (Serpell et al., 2023). Additionally, research on sport motivation has found gender differences among elite athletes, where females valued teamwork and cohesion more than males, while males were often more motivated by competition and skill development (Moradi et al., 2020). Considering these gender differences in team dynamics, coaching approaches, and motivation, strengths related to both relationship building and influencing (e.g., Competition®) may be expressed differently based on gender, prompting further exploration of gender differences in CliftonStrengths® profiles among both athletes and coaches.

The Present Study

Given the limited research examining strengths in sport, the

purpose of the present study was to examine the prevalence rates of the 34 CliftonStrengths® signature strengths among different types of athletes, coaches, and sports, as well as how these groups compared to each other and the public CliftonStrengths® data. Specifically, the following research questions were examined: (a) What are the prevalence rates of signature strengths among college, high school/club, Olympian/ professional/USA team athletes across a variety of sports? (b) What are the prevalence rates of signature strengths among college, high school/club, Olympian/ professional/USA team coaches across a variety of sports? (c) How do signature strengths differ across team versus individual sports, contact versus non-contact sports, and gender? and (d) How do athletes' and coaches' signature strengths compare to the public CliftonStrengths® data? The analyses conducted were intended to be descriptive and exploratory in nature, without a priori hypotheses, given the minimal research on strengths in sport.

Method

Participants

Participants included both athletes ($n = 1,110$) and coaches ($n = 406$). The athletes and coaches competed at the following levels: collegiate ($n = 946$, 62.5% [$n_{\text{athletes}} = 774$, 69.7% of all athletes; $n_{\text{coaches}} = 174$, 42.9% of all coaches]; NCAA, National Association of Intercollegiate Athletics [NAIA, community college), club sport ($n = 250$, 16.5% [$n_{\text{athletes}} = 153$, 13.8%; $n_{\text{coaches}} = 97$, 23.9%]), national team members ($n = 132$, 8.7% [$n_{\text{athletes}} = 83$, 7.5%; $n_{\text{coaches}} = 49$, 12.1%]; Team USA affiliated), Olympians ($n = 68$, 4.5% [$n_{\text{athletes}} = 43$, 3.9%; $n_{\text{coaches}} = 25$, 6.2%]), high school (67 , 4.4% [$n_{\text{athletes}} = 42$, 3.8%; $n_{\text{coaches}} = 25$, 6.2%]), and professional (51 , 3.4% [$n_{\text{athletes}} = 15$, 1.4%; $n_{\text{coaches}} = 36$, 8.9%]). Team USA athletes are those selected to represent the United States in international competitions or events leading to the Olympic or Paralympic Games, as determined by their National Governing Bodies (NGB; United States Olympic & Paralympic Committee [USOPC], 2024). While all USA Olympians are Team USA athletes, the broader category of Team USA athletes includes individuals who may not have participated in the Olympic Games themselves. To avoid duplicate counting in our analyses, participants were categorized as either Olympians or Team USA athletes, but not both. Of the athletes, 87.7% identified as women, and 12.3% identified as men. Of the coaches, 47.5% identified as women, and 52.5% identified as men.

There was a total of 38 different sports represented (see Table 1). Consistent with the classification of sports and degree of contact experienced identified by the American Academy of Pediatrics Council on Sports Medicine and Fitness (as cited in Rice, 2008), the study participants were categorized into two groups: (a) *contact* and collision athletes, where contact sports involve significant physical impact between players (e.g., basketball) and collision sports involve intentional physical collisions as a fundamental element (e.g., football, hockey); or (b) *non-contact* or limited-contact athletes (e.g., softball, volleyball). An athlete who reported playing multiple sports was placed in the contact group if any of the sports were listed as contact based.

Demographic data was gathered through team rosters and supplemented with field observations where participants shared additional information, such as playing positions and other relevant attributes during team interactions. Other demographics (e.g., race,

ethnicity, age, years of sport experience) were not collected, as the original purpose of collecting the data used in this study was for the first and fourth authors to have a record of individual and team CliftonStrengths® results when facilitating workshops. Thus, additional survey questions were intentionally kept to a minimum.

Table 1. Participant characteristics

Group	All ($N = 1,516$)		Athletes ($n = 1,110$)		Coaches ($n = 406$)	
	n	%	n	%	n	%
Sport						
Softball	907	59.8	744	67.0	163	40.1
Volleyball	156	10.3	125	11.3	31	7.6
Baseball	71	4.7	32	2.9	39	9.6
Triathlete	56	3.7	38	3.4	18	4.4
Men's soccer	51	3.4	44	4.0	7	1.7
Multiple	40	2.6	1	0.1	39	9.6
Women's lacrosse	35	2.3	28	2.5	7	1.7
Archery	34	2.2	30	2.7	4	1.0
Women's soccer	24	1.6	19	1.7	5	1.2
Men's basketball	22	1.5	14	1.3	8	2.0
Another sport ^a	120	7.9	35	3.2	85	20.9
Team vs. individual sport						
Team	1,354	89.3	1,023	92.2	331	81.5
Individual	162	10.7	87	7.8	75	18.5
Non-contact vs. contact sport						
Non-contact	1,316	86.8	1,002	90.3	314	77.3
Contact	200	13.2	108	9.7	92	22.7
Gender						
Women	1,169	77.1	976	87.9	193	47.5
Men	347	22.9	134	12.1	213	52.5

Note. Percentages may not sum to 100 due to rounding. ^aFrom most to least frequent, other sports, which consisted of less than 1% of the sample, were beach volleyball, swimming and diving, figure skating, football, track and field, men's golf, women's tennis, wrestling, skateboarding, women's basketball, women's water polo, women's crew, women's field hockey, women's golf, badminton, cycling, luge, men's bobsled, weightlifting, women's ice hockey, crossfit, gymnastics, men's hockey, para powerlifting, paralympic swimming, paralympic women's sitting volleyball, paralympics cross-country skiing, Reserve Officers' Training Corps, and snowboarding.

Measure

CliftonStrengths®. Participants completed the CliftonStrengths® assessment (Asplund & Harter, 2023). The current version of the measure iteration contains 200 item-pairs (Asplund & Harter, 2023). Each of the 200 item-pairs includes potential self-descriptors, such as “I get to know people individually,” and “I accept many types of people,” in which the respondent selects the statement that best describes them and to what extent it describes them (Asplund & Harter, 2023, p. 5). The measure is completed in a standardized fashion; participants complete the measure online and have 20 seconds to answer each item. Upon completion, participants are provided with their top five highest-scoring themes from the 34 strength themes possible.

In the most recent technical report of the CliftonStrengths®, internal consistency reliabilities ranged from $\alpha = 0.61$ to 0.77 , with an average of 0.71 across themes (Asplund & Harter, 2023). From past studies, test-retest reliabilities have ranged from $\alpha = 0.53$ to 0.81 after one month, from 0.50 to 0.82 after three months, and from 0.63 to 0.82 after six months (Asplund et al., 2009; Asplund & Harter, 2023). Asplund and Harter (2023) note the reliability coefficients of the CliftonStrengths® are comparable to those found in personality/trait research.

Convergent validity has been established with the Big Five factors of personality (Harter & Hodges, 2003), the 16 Personality Factor Questionnaire (Schreiner, 2006), and the California Psychological Inventory (Schreiner, 2006).

Procedure

The data collected in this study came from databases maintained separately by the first and fourth authors, who have been independently facilitating strength-based individual and team workshops for over a decade. These databases were combined for the purpose of this study. Both of these researchers have earned certification through the Gallup® Organization and received training in coaching workshops. As part of their independent practice, these two researchers created and maintained separate databases to organize the CliftonStrengths® results from each individual or team training they facilitated.

Each participant completed the CliftonStrengths® independently, following the standardized online assessment procedures, prior to participating in a workshop. Each participant received a personalized Signature Themes Report generated by Gallup®. No information about the participants’ strengths, or strengths in general, were provided to participants prior to the workshop.

All participants agreed to complete the assessment online, share their results (and provided approval for adding their results to the researchers’ databases), as well as agreed to allow their results to be referenced for future research analysis. The subsequent secondary data analysis conducted in this study was approved by the first author’s institutional review board.

To help prevent the impact of any bias on this study, the first and fourth authors collaborated with two researchers (the second and third authors) – whom they did not previously know, who were not part of the workshops, and who are not CliftonStrengths® coaches. In addition, the third author conducted all of the analyses and wrote

the Results section independently, and all authors reviewed the interpretation of the findings in the Discussion section. The strengths data collected was done so independently of the first and fourth authors; the CliftonStrengths® is completed online through an independent website hosted by Gallup. The first and fourth authors received the strengths findings from reports generated by Gallup, which were added to their databases.

Data Analysis Plan

The first two research questions focused on examining prevalence rates and descriptive statistics of CliftonStrengths® and strength domains among athletes and coaches. Given all data were categorical, nonparametric test assumptions were assessed following recommendations from Denis (2018). For Kendall’s τ correlations, data were required to be ordinal, with scores on one variable monotonically related to the other variable. Chi-square assumptions included having all cells of proposed inferential tests with expected values at five or more. Type of sport was excluded from chi-square analyses given its wide range (1-906) in subsample per sport and because dichotomous variables describing sport types preexisted in the dataset (i.e., non-contact vs. contact; team vs. individual).

The third and fourth research questions focused on between-group comparisons, including rank order analyses of CliftonStrengths® among groups and examination of differences across domains. Typically, when teams participate in a CliftonStrengths® training, the strengths coach/consultant will provide them with an overall team profile, combining coaches/athletes/trainers, etc. This provides an overall understanding and picture of the collective group, as everyone works together, but it is also helpful to examine specific groups within the unit (e.g., athletes and coaches) to determine if there are any differences between groups. Therefore, results will be reported based on a combined athlete and coach subgroup, as well as independent athletes and coaches’ subgroups.

Results

Preliminary Analyses

All data were complete for all 1,516 participants (100% response rate) for gender, role (athlete/coach), competition level, and sport type. The only variable with missing data was the sport “division” (e.g., NCAA Division I-III, NAIA), which was missing for 452 participants (29.82%). However, these data points were not truly “missing” in the traditional sense - rather, division classification was not applicable for certain participants (such as professional athletes, Olympians, and club sport participants) whose sports do not operate within the collegiate division system. Therefore, we excluded the division variable from analyses as it was not a relevant categorization for all participants. Assumptions for a Kendall’s τ correlation were met. To have adequate cell counts to meet chi-square assumptions, the 34 strengths were categorized into one of four CliftonStrengths® domains (Gallup, 2022b): Executing (Achiever®, Arranger®, Belief®, Consistency®, Deliberative®, Discipline®, Focus®, Responsibility®, Restorative®); Influencing (Activator®, Command®, Communication®, Competition®, Maximizer®, Self-Assurance®, Significance®, Woo®); Relationship Building (Adaptability®, Connectedness®, Developer®, Empathy®, Harmony®, Includer®, Individualization®, Positivity®, Relator®); and Strategic Thinking

Table 2. Prevalence of CliftonStrengths® among athletes, coaches, and the general public

Strength	General public (<i>N</i> = 12,525,357)		Athletes and coaches (<i>N</i> = 1,516)		Athletes (<i>N</i> = 1,110)		Coaches (<i>N</i> = 406)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Achiever®	807,808	6.45	241	15.90	164	14.77	77	18.97
Activator®	698,961	5.58	44	2.90	29	2.61	15	3.69
Adaptability®	669,175	5.34	108	7.12	95	8.56	13	3.20
Analytical®	657,645	5.25	15	0.99	8	0.72	7	1.72
Arranger®	546,667	4.36	30	1.98	20	1.80	10	2.46
Belief®	499,479	3.99	36	2.37	24	2.16	12	2.96
Command®	493,943	3.94	14	0.92	12	1.08	2	0.49
Communication®	487,509	3.89	26	1.72	22	1.98	4	0.99
Competition®	476,811	3.81	93	6.13	83	7.48	10	2.46
Connectedness®	442,798	3.54	13	0.86	8	0.72	5	1.23
Consistency®	441,544	3.53	23	1.52	17	1.53	6	1.48
Context®	439,898	3.51	29	1.91	15	1.35	14	3.45
Deliberative®	387,775	3.10	30	1.98	20	1.80	10	2.46
Developer®	353,331	2.82	36	2.37	29	2.61	7	1.72
Discipline®	325,524	2.60	10	0.66	5	0.45	5	1.23
Empathy®	323,335	2.58	36	2.37	26	2.34	10	2.46
Focus®	316,691	2.53	7	0.46	7	0.63	0	—
Futuristic®	315,294	2.52	46	3.03	40	3.60	6	1.48
Harmony®	313,965	2.51	64	4.22	45	4.05	19	4.68
Ideation®	313,767	2.51	11	0.73	7	0.63	4	0.99
Includer®	311,891	2.49	54	3.56	42	3.78	12	2.96
Individualization®	306,392	2.45	27	1.78	14	1.26	13	3.20
Input®	299,379	2.39	13	0.86	11	0.99	2	0.49
Intellection®	286,578	2.29	2	0.13	1	0.09	1	0.25
Learner®	285,340	2.28	64	4.22	35	3.15	29	7.14
Maximizer®	272,293	2.17	9	0.59	7	0.63	2	0.49
Positivity®	251,439	2.01	39	2.57	26	2.34	13	3.20
Relator®	234,964	1.88	63	4.16	38	3.42	25	6.16
Responsibility®	223,218	1.78	39	2.57	19	1.71	20	4.93
Restorative®	206,420	1.65	197	12.99	166	14.95	31	7.64
Self-Assurance®	176,506	1.41	2	0.13	2	0.18	0	—
Significance®	144,609	1.15	3	0.20	2	0.18	1	0.25
Strategic®	119,485	0.95	63	4.16	46	4.14	17	4.19
Woo®	94,925	0.76	29	1.91	25	2.25	4	0.99
Strength Domain	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Executing	3,593,938	28.69	613	40.44	442	39.82	171	42.12
			$z = -10.11, p < .001$		$z = -0.68, p = .50$			
Influencing	1,731,117	13.82	220	14.51	182	16.40	38	9.36
			$z = -0.78, p = .43$		$z = 3.50, p < .001$			
Relationship Building	3,959,637	31.61	440	29.02	323	29.10	117	28.82
			$z = 2.17, p = .03$		$z = 0.21, p = .83$			
Strategic Thinking	7,200,301	57.49	243	16.03	163	14.69	80	19.70
			$z = 32.65, p < .001$		$z = -2.29, p = .02$			

Note. Percentages may not sum to 100 due to rounding.

Table 3. Top five CliftonStrengths® among athletes, coaches, and the general public

Group	Strength 1 <i>n</i> (%)	Strength 2 <i>n</i> (%)	Strength 3 <i>n</i> (%)	Strength 4 <i>n</i> (%)	Strength 5 <i>n</i> (%)
General public	Achiever®	Responsibility®	Learner®	Relator®	Strategic®
Athletes and coaches	Achiever®	Restorative®	Adaptability®	Competition®	Harmony®
Athletes	Restorative®	Achiever®	Adaptability®	Competition®	Strategic®
Coaches	Achiever®	Restorative®	Learner®	Relator®	Responsibility®

Note. Denominators for percent calculations are determined by the total sample size listed in column 1 of each respective row. Summative discrepancies may be due to rounding.

(Analytical®, Context®, Futuristic®, Ideation®, Input®, Intellection®, Learner®, Strategic®). Further, the six competition levels were merged to form three larger groups based on McKay et al.'s (2022) classification system (i.e., high school, club [Tier 3]; college [Tier 4]; Olympian, professional, USA team [Tier 5])

Prevalences and Descriptive Statistics

Please refer to Table 2 for prevalence rates of CliftonStrengths® and strength domains among athletes, coaches, and the general public; and see Table 3 for the top five CliftonStrengths® among athletes, coaches, and the general public. Athlete and coaches subgroup information is in the Supplementary Materials. The general public's mode domain was Strategic Thinking, with more than half of the general public sample in that category ($n = 7,200,301$, 57.49%). The combined athletes and coaches sample's mode domain was Executing ($n = 613$, 40.44%). Z-tests suggested a trend in that the general public and the athletes/coaches statistically significantly differed between proportions across domains. That is, the Executing domain comprised a statistically larger proportion of the athlete/coach sample than of the general public sample ($z = -10.11$, $p < .001$); and the Relationship Building ($z = 2.17$, $p = .03$) and Strategic Thinking ($z = 32.65$, $p < .001$) domains comprised a larger proportion of the general public sample than that of the athlete/coach sample. Athletes had a statistically larger proportion of those in the Influencing domain ($z = 3.50$, $p < .001$) than coaches, who had a statistically larger proportion of those in the Strategic Thinking domain ($z = -2.29$, $p = .02$) than did athletes.

Between-Group Comparisons

Table 4 contains the rank order of CliftonStrengths® among athletes, coaches, and the general public, as well as Kendall's τ correlations between the general public and the combined athlete/coach sample, as well as correlations between athletes and coaches. All correlations were statistically significant in the positive direction at the $\alpha = .05$ level, and there was overlap among the 95% confidence intervals of the correlation point estimates across all pairs. These descriptive statistics suggest that rank orders were similar between groups.

Although with relatively small effect sizes (Cramer's $V = .05-.16$), chi-square tests examining the broader four domains suggested statistically significant differences between the athlete and coach roles and across genders, as well as team versus individual sports (compared within athletes and coaches as well as combined). Patterns suggested that men, across athletes and coaches, had a smaller proportion of individuals in the Influencing domain (vs. the

Executing and Relationship Building domains). Aside from that pattern, other subgroup crosstabs and the broader-level crosstab of non-contact vs. contact sports retained the null hypothesis. Please see Table 5 for athletes and coaches, with subgroup information in the Supplementary Materials.

Discussion

There were several goals of this study. The prevalence of athlete and coaches' CliftonStrengths® signature strengths across various sports were identified, which were then compared to one another across groups (team versus individual sports, contact versus non-contact sports, and gender), as well as the general public CliftonStrengths® data.

The top five strengths among athletes and coaches combined were: Achiever®, Restorative®, Adaptability®, Competition®, and Harmony®. Among all types of athletes, the top five strengths were: Restorative®, Achiever®, Adaptability®, Competition®, and Strategic®. With the coaches, the top five strengths were: Achiever®, Restorative®, Learner®, Relator®, and Responsibility®. The lowest-ranking strengths for athletes and coaches combined were Self-Assurance®, Intellection®, Significance®, Focus®, and Maximizer®.

These patterns of high and low-ranking strengths have important implications (Gallup, 2024). The highest-ranked strengths – particularly one's top five strengths – are most often focused on in strength interventions both in practice and research (Louis & Lopez, 2014). However, while all 34 strengths are present to some degree, athletes and coaches may struggle to consistently draw on these lower strengths, impacting their ease of adapting to certain challenges or perspectives. The lower prevalence of certain strengths among athletes and coaches, particularly Intellection® (reflective thinking) and Focus® (sustained attention), may reflect the dynamic, action-oriented nature of sport environments where immediate response and adaptability are often prioritized over contemplative approaches. Understanding these strengths patterns can help inform how athletes and coaches might structure their approaches to training, competition, and team dynamics.

Strengths and Athletic Team Roles

Based on the skills commonly used by athletes and coaches, many of the strength themes align with their roles. It is often assumed coaches and athletes are naturally inclined to be competitive and focused on achievement. According to Howley and Miller (2023), a general consensus is an athlete is identified as being

Table 4. Rank order of CliftonStrengths® among athletes, coaches, and the general population

Strength	AC	AT	CO	GP
Achiever®	1	2	1	1
Restorative®	2	1	2	7
Adaptability®	3	3	10	10
Competition®	4	4	16	25
Harmony®	5	6	6	9
Learner®	6	10	3	3
Relator®	7	9	4	4
Strategic®	8	5	7	5
Includer®	9	7	14	21
Futuristic®	10	8	22	14
Activator®	11	11	8	29
Positivity®	12	14	12	12
Responsibility®	13	20	5	2
Belief®	14	16	13	16
Developer®	15	12	20	11
Empathy®	16	13	18	8
Arranger®	17	18	15	23
Deliberative®	18	19	17	26
Context®	19	22	9	28
Woo®	20	15	27	24
Individualization®	21	23	11	13
Communication®	22	17	25	15
Consistency®	23	21	21	18
Analytical®	24	26	19	17
Command®	25	24	28	33
Connectedness®	26	27	23	20
Input®	27	25	29	6
Ideation®	28	29	26	22
Discipline®	29	31	24	30
Maximizer®	30	30	30	27
Focus®	31	28	33	31
Significance®	32	33	32	32
Intellection®	33	34	31	19
Self-Assurance®	34	32	34	34
Kendall's τ , 95% CI	AC	AT	CO	GP
Athletes and	—	.86 [.79,	.71 [.57,	.48 [.27,
Athletes	—	—	.59 [.39,	.44 [.23,
Coaches	—	—	—	.51 [.32,
General public	—	—	—	—

Note. 1 = most prevalent strength, 34 = least prevalent strength. All $ps < .001$. Athletes and coaches (AC): $N = 1,516$; Athletes (AT): $N = 1,100$; Coaches (CO): $N = 416$; General public (GP): $N = 12,525,357$.

a “high achiever” and one who “thrives on competition” (para. 7). Therefore, it was not surprising to find Achiever® and

Competition® ranking in the top five strengths among athletes and coaches, nor was it surprising that Achiever® and Competition® also ranked in the top five strengths among all types of athletes.

Restorative® Strength in Sport. It was notable to find the theme of Restorative® as ranking in the top five strengths among athletes and coaches. Restorative® thinking is argued to be the highest form of solution-based problem-solving (Gallup, 2023a). It often involves using a process of identifying something that is not working and actively bringing it back to its original state of functionality. It is not surprising then that a significant number of athletes in this study have the Restorative® theme in their top five strengths report. Participating in high-performance athletics can often be seen as engaging in one of the highest forms of problem-solving analysis.

Considering the variety of sports represented in the sample and finding Restorative® as the first-ranked theme among athletes and second-ranked theme among coaches, it is critical to emphasize the opportunity to maximize this strength in a sports context. Approaching competition, or even practice, from solely a task-oriented lens (e.g., specific skill development, repetitive drills) would be insufficient for a coach or athlete who is listening through a Restorative® lens. A game or practice plan without linkage to a specific problem being solved may not resonate as deeply for a high-performance athlete who has the strength of Restorative®. Those with the Restorative® theme will be driven by identifying the problem they are attempting to solve.

The prominence of Restorative® among athletes in this study provides empirical support for the role of a problem-solving mindset in athletic resilience and well-being. Athletes' beliefs about stress, specifically, whether they view stress as enhancing or debilitating, is related to their psychological well-being; specifically, athletes who view stressors as challenges (rather than threats) also experience lower depressive symptoms and greater vitality (Mansell, 2021). Thus, athletes with the Restorative® strength may naturally approach stressors with this challenge mindset, viewing errors as opportunities to grow rather than as overwhelming obstacles. This problem-solving orientation is consistent with research on elite athletes, who embrace solution-focused thinking when facing setbacks (Fletcher & Sarkar, 2012). Athletes who actively problem-solve also often perform better and adapt more effectively compared to athletes who avoid challenges or focus only on managing their emotions (Nicholls & Polman, 2007). Athletes with the Restorative® strength may be better equipped in this area, as they tend to see mistakes as providing them with information about what they need to improve upon rather than as personal failures. This problem-solving approach of emphasizing solutions rather than self-criticism, may protect them against negative thinking patterns and enhance their ability to adapt effectively to setbacks.

Input® Strength in Sport. When comparing the athlete and coach samples to the general public sample, it was also noteworthy that Input® had a much lower ranking for athletes and coaches (ranked 25th for athletes and 29th for coaches) compared to the general public sample (ranked 6th). Individuals with the strength of Input® often have a need to collect and archive data, which may entail accumulating information, ideas, or artifacts (Gallup, 2023b). When considering the strength of Input® from a time perspective, it

Table 5. Chi-square tests of CliftonStrengths® domains among athletes and coaches subgroups

Comparison groups	Executing		Influencing		Relationship building		Strategic thinking		<i>df</i>	χ^2	<i>p</i>	<i>ES</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%				
Role	—	—	—	—	—	—	—	—	3	15.21	.002	.10
Athlete (<i>N</i> = 1,110)	442	39.82 ^a	182	16.40 ^b	323	29.10 ^a	163	14.68 ^a	—	—	—	—
Coach (<i>N</i> = 406)	171	42.12 ^a	38	9.36 ^b	117	28.82 ^a	80	19.70 ^a	—	—	—	—

Note. *N* = 1,516. *ES* = Cramer's *V*. Percentages are summed across rows and may not sum to 100 due to rounding. Superscript letter *a* denotes a subset of CliftonStrengths® domains whose column proportions statistically significantly differ from that of superscript letter *b* across the same row. Superscript letter *a, b* denotes a subset of CliftonStrengths® domains whose column proportions statistically significantly differ from that of superscript letter *a* and superscript letter *b* across the same row

is evident that the process of collecting information, archiving detailed findings, and sifting through the data takes a lengthy amount of time.

It is possible Input® was ranked so low by the athlete sample due to their time often being very limited, and there are a number of time constraints inherent in athletic training and competition. Elite athletes frequently report insufficient time to fulfill the competing demands of sport and other life activities (Mateu et al., 2024), which often hinders the opportunity for the reflective information-gathering processes that characterize the Input® strength. The intensity of an athlete's sport training can also be a situational antecedent of burnout (Lower-Hoppe et al., 2022), and athletes at all competitive levels often experience tension in maintaining a balance in the time spent on training and time spent away from the sport. The Input® strength is best cultivated when there is accessible time to digest, reflect, and process information (Gallup, 2023b). Athletes – especially those performing at the elite level – may have limited time to engage in these reflective activities, which are essential to developing this strength. Coaches high in Input® may need to be particularly mindful of this strength disconnect. While coaches might naturally collect extensive statistics, film analysis, and detailed scouting reports, athletes low in Input® may find this information overwhelming and benefit more from synthesized, actionable tasks. Coaches might adapt by highlighting key information and emphasizing hands-on demonstration rather than providing detailed explanations.

Responsibility® Strength in Sport. The Responsibility® strength was ranked much lower for athletes (ranked 20th) compared to coaches (ranked 5th) and the general public sample (ranked 2nd). Individuals with the strength of Responsibility® often take psychological ownership of what they say they will do (Gallup, 2023c). Sport, by its very nature, is often experienced in an environment of unknowns; thus, for athletes, there is no certainty of the outcome or guarantee of success. This uncertainty may create tension with the Responsibility® strength, as athletes cannot fully control outcomes regardless of their commitment to their sport, coach, and team. Therefore, it is possible athletes in this study demonstrated a low ranking of the Responsibility® theme given their common experience of a lack of outcome clarity (e.g., clear finish lines, success based on effort). Athletes with the strength of Responsibility® may also find it difficult to guarantee they finish (succeed/win) in the way they have promised/trained.

From an SDT perspective (Ryan & Deci, 2000), the low ranking of Responsibility® has implications for the need for competence, where athletes feel capable of producing their intended performance outcomes. When athletes view outcomes as outside of their control, they often experience more stress and lower well-being (Nicholls et al., 2016). Athletes high in Responsibility® may struggle in this regard, as they might feel they are committing to outcomes that they cannot guarantee, and therefore undermine their sense of competence. This tension may explain why Responsibility® is lower in this population.

Coaches in this study ranked significantly higher in the Responsibility® theme, which may be due to the nature of the coaching role itself and the perceived impact coaches have on the outcome. Morgan (2019) found that coaches account for approximately 20 to 30 percent of the variation in team outcomes, including wins and losses, points scored and allowed, and sport-specific performance metrics across professional and collegiate levels. Thus, coaches' impact on team performance and game outcomes could be attributed to the higher ranking of the Responsibility® theme among this group. Coaches high in Responsibility® should be mindful of how their perspective might be different from athletes lower in Responsibility®. Reframing responsibilities around what athletes can control, such as executing their routine or focusing on specific techniques, rather than winning, can help athletes feel more competent and less anxious about outcomes they cannot guarantee (Swann et al., 2015).

Strengths and Gender

When examining the prevalence of strengths across gender and athlete or coach status, the top two strengths were the same for athletes and coaches among women – Achiever® and Restorative®. The remaining top five strengths for women athletes were: Adaptability®, Competition®, and Harmony®. Among women athletes, the only top five strength that was not in the top five ranked list for all athletes was Harmony®. The remaining top five strengths for women coaches were: Harmony®, Relator®, and (tied) Activator®/Responsibility®. Thus, Harmony® appeared especially relevant for women athletes and coaches. This aligns with past research, as women were found to be more likely to perceive a sports performance as successful if they considered their team to be a socially cohesive group (Eys et al., 2015). Among men, the top five strengths for athletes were: Competition®, Restorative®, Achiever®, Relator®, and Strategic®. Among the men coaches, the

top five strengths were: Achiever®, Learner®, Relator®, Restorative®, and Context®. These themes also align with the literature in that while women may value teamwork and cohesion (Harmony®) more than men, men are often motivated to sport participation from the basis of competition and skill development (Moradi et al., 2020). These gender differences likely reflect a broader pattern of gender role socialization, where reinforcement of traditional gender expectations is often experienced in sport (e.g., Gosai et al., 2021; Hardin & Greer, 2009). Research suggests that women, historically, have been socialized toward communal values that emphasize cooperation and relationship-building, whereas men have been socialized more toward agentic values such as competition, dominance, and individual achievement (Grysmen & Booker, 2023; Hsu & Badura, 2021). The persistence of these gendered strength patterns among both athletes and coaches suggests that sport contexts may continue to reflect and reinforce traditional gender role expectations. However, it is important to note that these patterns reflect socialization processes rather than innate differences, as individual athletes demonstrate considerable variation in their strength profiles regardless of gender.

CliftonStrengths® Domains

When examining the broader CliftonStrengths® domains (Executing, Influencing, Relationship Building, and Strategic Thinking), the mode domain for athletes and coaches combined was Executing, which was a statistically significantly larger proportion than the general public. This suggests athletes and coaches focus on goals and work hard to achieve those goals and tasks. Past research suggests that goal setting is widely applied in sport (e.g., Lehner & Schuster, 2023; Williamson et al., 2022) and is associated with other psychological and psychophysiological outcomes (e.g., reduction in cognitive anxiety, increased confidence, and self-efficacy; Williamson et al., 2022).

When examining comparisons between athletes and coaches on the strength's domains, they had similar proportions on the Executing and Relationship Building domains. Athletes had a statistically larger proportion of individuals with the Influencing domain compared to coaches, whereas coaches had a statistically larger proportion of individuals with the Strategic Thinking domain. Coaches are more likely putting their Strategic Thinking strengths into use by creating plans, developing plays, and making decisions related to their sport and athletes. Oftentimes, athletes and coaches are motivated based on these strengths, as coaches tend to focus more on mastery-oriented skills, while athletes are driven to develop performance-oriented skills (Møllerløkken et al., 2017).

When comparing the CliftonStrengths® domains further between more specific groups, there were no statistically significant differences in proportions of strength domains represented by the different types of athletes (Tier 3, Tier 4, and Tier 5) or type of sport (non-contact vs. contact). This suggests excellence in sport is not limited to a common “top five” strengths profile, but rather that individuals can leverage their unique combinations of strengths to achieve success. It also suggests that people with particular strengths are not necessarily drawn to participating in sports.

When examining coaches and athletes combined, there was a significantly smaller proportion of individuals across women and men with the Strategic Thinking domain compared to the other three

domains. There were no other statistically significant differences across strengths domains for women. When examining proportions across men, athletes had a smaller proportion of those with the Influencing domain compared to Executing and Relationship Building; Strategic Thinking was significantly lower than Executing and Relationship Building and significantly higher than influencing. Men, across coaches, had a significantly smaller proportion of those with the Influencing domain; Strategic Thinking was significantly lower than Executing and Relationship Building, and significantly higher than influencing.

The gender-related findings from this study align with and extend previous research on gender differences among athletes and coaches in sport. Despite the significant increase in the number of women participating in sport and the number of coaching positions filled by women at all competitive levels, research shows that men continue to dominate sport leadership positions globally (Harvey & Price, 2021). It is feasible that women coaches had a higher ranking of strengths in the Influencing domain due to the demands on their ability to advocate for systemic equity and influence change. This difference may reflect women coaches' need to advocate for systemic equity (Harvey & Price, 2021), rate higher in relationship quality dimensions (Murray et al., 2018), and place greater emphasis on team cohesion (Eys et al., 2015). Overall, these findings add nuance to an understanding of how gender may influence leadership approaches in sport contexts.

Applied Implications

The findings from this study offer several practical applications for coaches, sport administrators, and sport psychologists. Recognizing that Restorative® is the highest-ranked strength among athletes suggests that training environments should incorporate problem-solving opportunities. Rather than relying extensively on repetitive skill drills, coaches could frame practice sessions around specific performance problems to solve and structure post-game debriefs around collaboratively identifying areas of growth and possible solutions.

To enhance team building, particularly with women athletes who have a higher ranking of Harmony®, facilitating strengths-based conversations could help athletes recognize how diverse strengths profiles contribute to improved team cohesion. This dialogue might include identifying how teammates' unique strengths complement each other, fostering mutual appreciation for individual differences, and developing greater team chemistry.

Considering the differences of strengths among athletes and coaches, particularly regarding Input® and Responsibility®, sport psychologists and administrators could offer workshops helping coaches adapt their approaches to athletes' strengths profiles. Coaches high in Input® can highlight key insights rather than overwhelming athletes with data, while coaches high in Responsibility® could practice reframing commitments around what athletes can control rather than focusing on uncertain outcomes. Mental skills training could also be tailored to strengths. Athletes high in Restorative® might respond better to solution-focused interventions, while those high in Competition® might benefit from competitive scenario mental imagery exercises. Finally, since athletes across all competition levels demonstrated similar strengths rankings, strengths-based interventions (e.g., identifying

strengths, using strengths in new and different ways) could be introduced early in an athlete's career, helping them develop and leverage their strengths as they progress.

Limitations & Future Directions

There were several limitations to this study. First, this study would have benefited from a greater diversity among sport levels and types and demographics represented. While it is a strength this study provided insight into elite coaches' and athletes' strengths – a population that is not commonly represented in the literature – it did not include any individuals participating in Tier 0–2 sport classification levels (e.g., recreationally active), limiting the ability to generalize the findings to a broader array of athletes. Further, while there were 38 different sports represented in the study, the majority of participants played softball (59.8%), and the athlete participants primarily identified as women (87.7%). Some important sample characteristics (e.g., age, race/ethnicity, gender outside of the binary) were missing, which limits the interpretation of the findings. Overall, expanding the demographics assessed in the future is recommended in future studies.

Second, the internal consistency values reported by past researchers for some of the strength themes within the CliftonStrengths® were below 0.70. While higher internal consistency values would be ideal for some of the strength themes, the utility and fit of the measure as a whole with the athlete/coach sample were also important considerations. Future research examining the psychometric qualities of the CliftonStrengths® – with the goal of strengthening its internal consistencies across strengths themes – would be worthwhile.

Since this is the first research study designed to quantitatively examine the intersection of strengths and sport, there is a great deal of potential for future strengths-based research to provide valuable insights for talent development, team composition, and role optimization. For instance, exploring CliftonStrengths® patterns among different playing positions (e.g., baseball/softball pitchers versus catchers, ice hockey goalies versus forwards) could help coaches better understand how players within various roles leverage their unique strengths for success. Future studies could also examine potential relationships among strengths and specific leadership roles on sport teams (e.g., team captains, managers), or differences among strengths of individuals who serve in supporting roles (e.g., athletic trainers, equipment managers, team statisticians). Understanding these strengths profiles could enhance leadership development programs and improve team dynamics by better aligning individuals' natural talents with their roles. This knowledge would ultimately help sport organizations better select, develop, and support individuals in ways that maximize both individual and team performance.

Conclusion

This study examined the prevalence of strengths among different types of athletes and coaches and compared them to a general public sample of 12.5+ million individuals who have completed the CliftonStrengths® assessment, providing new information involving the intersection of strengths and sport. This is also the first study to examine strengths comparisons among groups in sport, which helps highlight gaps and areas of growth.

Results of this study provide insight into potential applications of strengths with Tier 3-5 athletes and coaches. Specifically, it is recommended sport teams intentionally provide: (a) collaborative problem-solving training opportunities, (b) team-building exercises designed to identify how to best work with different strengths profiles to increase team unity, (c) professional development experiences to help coaches best work with athletes' unique strengths, and (d) mental skills training that intentionally align with athletes' strengths.

While this study provides a greater understanding of the representation of strengths among Tier 3-5 athletes and coaches, a comparison among these groups, as well as recommendations for applications to help athletes and coaches' strength development, additional research in this area is needed to examine all tiers of sport, a greater diversity of demographics, and additional group differences. Longitudinal studies examining strength patterns across athletes and coaches in sport, as well as interventions tailored to the strengths most prominent to specific groups in sport, would expand the literature and evidence-based applications of strengths even further.

Compliance with Ethical Standards

Disclosure of Potential Conflicts of Interest. The second and third authors have no competing interests to declare. The first and fourth authors are coaches/consultants and the data set from this paper stems from that work. However, data were analyzed and reported by a non-biased party (third author) who had no prior involvement with the data. The results reported will not be used for financial gain. This information was disclosed upon submission.

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Ethical Approval. The institutional review board at Azusa Pacific University deemed the study as Not Human Subjects Research, given the secondary data analysis protocol.

Informed Consent. Consent was obtained from all participants included in the study.

Data Sharing Statement. The data that support the findings of this study can be made available to qualified individuals on reasonable request from the corresponding author, AR. The data are not publicly available due to their involving past client work and due to their containing information, that could compromise the privacy of research participants.

Author Contributions. The first and fourth authors collected the data. The third author analyzed and reported the data in the results. The first and second authors contributed to the introduction, method, and discussion sections. The fourth author contributed to the discussion section. All authors reviewed the paper in its entirety and contributed to the revisions.

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References

- Allan, B. A., Owens, R. L., & Douglass, R. (2019). Character strengths in counselors: Relations with meaningful work and burnout. *Journal of Career Assessment*, 27(1), 151-166. <https://doi.org/10.1177/1069072717748666>
- Asplund, J., & Harter, J. (2023). *The CliftonStrengths® technical report: Development and validation of the assessment known as CliftonStrengths® and StrengthsFinder®*. <https://www.gallup.com/cliftonstrengths/en/253790/science-of-cliftonstrengths.aspx>
- Asplund, J., Lopez, S. J., Hodges, T., & Harter, J. (2009). *The Clifton StrengthsFinder 2.0 technical report: Development and validation*. <https://osa.uark.edu/pdfs/clifton-strengthsfinder-technical-report.pdf>
- Côté, J., & Vierimaa, M. (2014). The developmental model of sport participation: 15 years after its first conceptualization. *Science & Sports*, 29, S63-S69. <https://doi.org/10.1016/j.scispo.2014.08.133>
- Chrétien, A., Hayotte, M., Vuillemin, A., & d'Arripe Longueville, F. (2024). Resilience profiles of elite athletes and their associations with health-related behaviors, well-being, and performance: A latent profile analysis. *Psychology of Sport and Exercise*, 74(102689). <https://doi.org/10.1016/j.psychsport.2024.102689>
- Denis, D. J. (2018). *SPSS data analysis for univariate, bivariate, and multivariate statistics*. Wiley. <https://doi.org/10.1002/9781119465775>
- Dworak, J., & Pieper-Olson, H. (2007, January). Sports and strengths: How the Clifton StrengthsFinder is changing the sport of volleyball. StrengthsQuest. Retrieved from <https://www.weber.edu/WSUImages/leadership/docs/sq/sports-strengths.pdf>
- Eys, M., Ohlert, J., Evans, M. B., Wolf, S. A., Martin, L. J., Van Bussel, M., & Steins, C. (2015). Cohesion and performance for female and male sport teams. *The Sport Psychologist*, 29(2), 97-109. <https://doi.org/10.1123/tsp.2014-0027>
- Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise*, 13, 669-678. <https://doi.org/10.1016/j.psychsport.2012.04.007>
- Gallup. (2024). Learn how the CliftonStrengths assessment works. <https://www.gallup.com/cliftonstrengths/en/253676/how-cliftonstrengths-works.aspx>
- Gallup. (2023a). An introduction to the Restorative™ CliftonStrengths theme. <https://www.gallup.com/cliftonstrengths/en/252323/restorative-theme.aspx>
- Gallup. (2023b). An introduction to the Input™ CliftonStrengths theme. <https://www.gallup.com/cliftonstrengths/en/252278/input-theme.aspx>
- Gallup. (2023c). An introduction to the Responsibility™ CliftonStrengths theme. <https://www.gallup.com/cliftonstrengths/en/252320/responsibility-theme.aspx>
- Gallup. (2022a). Learn how the CliftonStrengths assessment works. <https://www.gallup.com/cliftonstrengths/en/253676/how-cliftonstrengths-works.aspx#ite-253307>
- Gallup. (2022b). *What are the four domains of CliftonStrengths?* <https://www.gallup.com/cliftonstrengths/en/253736/cliftonstrengths-domains.aspx>
- Gallup. (2019). Theme frequency: All countries. <https://www.strengthsasia.com/wp-content/uploads/2019/01/Theme-Frequency-All-Countries-20-Million.pdf>
- Gallup. (2016). CliftonStrengths theme frequency report. <https://www.strengthsquest.com/198482/strengthsquest-theme-frequency-report-november-2016.aspx>
- Ghielen, S. T. S., van Woerkom, M., & Meyers, M. C. (2017). Promoting positive outcomes through strengths interventions: A literature review. *The Journal of Positive Psychology* 13(6), 573-585. <https://doi.org/10.1080/17439760.2017.1365164>
- Golby, J., & Sheard, M. (2004). Mental toughness and hardness at different levels of rugby league. *Personality and Individual Differences*, 37(1), 933-942. <https://doi.org/10.1016/j.paid.2003.10.015>
- Gosai, J., Jowett, S., & Rhind, D. J. (2021). Coaching through a “gender lens” may reveal myths that hinder female athletes: A multistudy investigation. *International Sport Coaching Journal*, 9(2), 222-233. <https://doi.org/10.1123/iscj.2021-0046>
- Grysmann, A., & Booker, J. A. (2023). Agency, communion, and the shifting gender norms in American society? A registered report. *Journal of Research in Personality*, 107(104427), 1-4. <https://doi.org/10.1016/j.jrp.2023.104427>
- Gucciardi, D. F. (2017). Mental toughness: Progress and prospects. *Current Opinion in Psychology*, 16, 17-23. <https://doi.org/10.1016/j.copsyc.2017.03.010>
- Hagger, M. S., & Chatzisarantis, N. L. D. (Eds.). (2007). *Intrinsic motivation and self-determination in exercise and sport*. Human Kinetics.
- Hardin, M., & Greer, J. D. (2009). The influence of gender-role socialization, media use and sports participation on perceptions of gender-appropriate sports. *Journal of Sport Behavior*, 32(2), 207-226.
- Harter, J. K., & Hodges, T. D. (2003). *Construct validity study: StrengthsFinder and the Five Factor Model*. Gallup.
- Harvey, S., & Price, L. (2021). Barriers and supports in the career trajectories of graduate-level female sports coaching students. In Norman, L. (Ed.), *Improving gender equity in sports coaching*, (1st ed., pp. 70-88). Routledge. <https://doi.org/10.4324/9781003028642>
- Hodges, T. D., & Clifton, D. O. (2004). Strengths-based development in practice. In P. A. Linley, & S. Joseph (Eds.). *Positive psychology in practice: From research to application* (pp. 256-268). Wiley & Sons. <https://doi.org/10.1002/9780470939338.ch16>
- Howells, K., Sarkar, M., & Fletcher, D. (2017). Can athletes benefit from difficulty? A systematic review of growth following adversity in competitive sport. *Progress in Brain Research*, 234, 117-159. <https://doi.org/10.1016/bs.pbr.2017.06.002>
- Howley, E. K., & Medaris Miller, A. (2023). *11 signs you were born to be an athlete*. USN. <https://health.usnews.com/wellness/articles/signs-you-are-made-to-be-an-athlete>
- Hsu, N., & Badura, K. (2021). Gender, “masculinity”, and “femininity”: A meta-analytic review of gender differences in

- agency and communion. *Psychological Bulletin*, 147(10), 987-1011. <https://doi.org/10.1037/bul0000343>
- Jones, M. I., & Parker, J. K. (2019). An analysis of the size and direction of the association between mental toughness and Olympic distance personal best triathlon times. *Journal of Sport and Health Science*, 8(1), 71-76. <https://doi.org/10.1016/j.jshs.2017.05.005>
- Khorram, M. H. (2022). Goal orientation based relationship between coaching efficiency, athlete satisfaction, and team cohesion. *Scientific Journal of Sport and Performance*, 2(1), 70-82. <https://doi.org/10.55860/XAQQ9577>
- Lavy, S. (2019). A review of character strengths interventions in twenty-first-century schools: Their importance and how they can be fostered. *Applied Research in Quality of Life*, 15, 573-596. <https://doi.org/10.1007/s11482-018-9700-6>
- Lehner, S., & Schuster, T. (2023). Examining the effects of goal setting and feedback on motivation and performance in sport. *Journal of Sport Psychology*, 32(2), 125-133.
- Lorimer, R., & Jowett, S. (2009). Empathic accuracy in coach-athlete dyads who participate in team and individual sports. *Psychology of Sport and Exercise*, 10(1), 152-158. <https://doi.org/10.1016/j.psychsport.2008.06.004>
- Louis, M. C., & Lopez, S. J. (2014). Strengths interventions: Current progress and future directions. In A. C. Parks & S. M. Schueller (Eds.), *The Wiley Blackwell handbook of positive psychological interventions* (pp. 68-89). Wiley Blackwell. <https://doi.org/10.1002/9781118315927.ch4>
- Lower-Hoppe, L., Lee, W., Brgoch, S. M., Ryder, A., & Lowe, C. (2022). Making the connection: Examining the antecedents and consequences of athlete burnout among collegiate sport club athletes. *Journal of Sport Behavior*, 45(4), 108-131.
- Mann, A., & Narula, B. (2017). Positive psychology in sports: An overview. *International Journal of Social Science*, 6(2), 153-158. <https://doi.org/10.5958/2321-5771.2017.00017.5>
- Mansell, P. C. (2021). Stress mindset in athletes: Investigating the relationships between beliefs, challenge and threat with psychological wellbeing. *Psychology of Sport and Exercise*, 57(102020). <https://doi.org/10.1016/j.psychsport.2021.102020>
- Mateu, P., Devís-Devís, J., Torregrossa, M., & Marques, R. F. R. (2024). A race against time: A critical analysis of elite student-athletes' accelerated temporality through story completion. *International Review for the Sociology of Sport*, 60(2), 341-361. <https://doi.org/10.1177/10126902241268022>
- McEwan, D. (2020). The effects of perceived teamwork on emergent states and satisfaction with performance among team sport athletes. *Sport, Exercise, and Performance Psychology*, 9(1), 1-15. <https://doi.org/10.1037/spy0000166>
- McKay, A. K., Stellingwerff, T., Smith, E. S., Martin, D. T., Mujika, I., Goosey-Tolfrey, V. L., Sheppard, J., & Burke, L. M. (2022). Defining training and performance caliber: A participant classification framework. *International Journal of Sports Physiology and Performance*, 17(2), 317-331. <https://doi.org/10.1123/ijsspp.2021-0451>
- Meany, B. C. (2023). Review of Self-Determination Theory and its application in coaching, instruction, and leadership. *MOJ Sports Medicine*, 6(1), 50-52. <https://doi.org/10.15406/mojms.2023.06.00139>
- Miglianico, M., Dubreuil, P., Miquelon, P., Bakker, A. B., & Martin-Krumm, C. (2020). Strength use in the workplace: A literature review. *Journal of Happiness Studies*, 21, 737-764. <https://doi.org/10.1007/s10902-019-00095-w>
- Møllerløkken, N. E., Lorås, H., & Pedersen, A. V. (2017). A comparison of players' and coaches' perceptions of the coach-created motivational climate within youth soccer teams. *Frontiers in Psychology*, 8, 210738. <https://doi.org/10.3389/fpsyg.2017.00109>
- Moradi, J., Bahrami, A., & Dana, A. (2020). Motivation for participation in sports based on athletes in team and individual sports. *Physical Culture and Sport. Studies and Research*, 85, 14-21. <https://doi.org/10.2478/pcsr-2020-0002>
- Morgan, B. (2019, March 4). *How much do coaches impact success in sport?* Harris School of Public Policy. <https://harris.uchicago.edu/news-events/news/how-much-do-coaches-impact-success-sports>
- Murray, P., Lord, R., & Lorimer, R. (2018). The influence of gender on perceptions of coaches' relationships with their athletes: A novel video-based methodology. *The Sport Journal*, 1-12.
- Nicholls, A. R., Levy, A. R., Carson, F., Thompson, M. A., & Perry, J. L. (2016). The applicability of self-regulation theories in sport: Goal adjustment capacities, stress appraisals, coping, and well-being among athletes. *Psychology of Sport and Exercise*, 27, 47-55. <https://doi.org/10.1016/j.psychsport.2016.07.011>
- Nicholls, A. R., & Polman, R. C. (2007). Coping in sport: A systematic review. *Journal of Sports Sciences*, 25(1), 11-31. <https://doi.org/10.1080/02640410600630654>
- Rice, S. G. (2008). American Academy of Pediatrics Council on Sports Medicine and Fitness. Medical conditions affecting sports participation. *Pediatrics*, 121(4), 841-848. <https://doi.org/10.1542/peds.2008-0080>
- Robles, A. M. (2012, May). Voices of elite athletes: Perceptions through a strengths-based philosophy of sport. *Journal of Performance Psychology*, 1-37.
- Robles, A. M. (2020). CliftonStrengths® in collegiate sport: An exploration of NCAA coaches' perceptions. *Applied Research in Coaching and Athletics Annual*, 35, 1-32.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Schreiner, L. A. (2006). A technical report on the Clifton StrengthsFinder with college students. <https://www.strengthsquest.com/192485/technical-report-clifton-strengthsfinder-college-students.aspx>
- Schutte, N. S., & Malouff, J. M. (2019). The impact of signature character strengths interventions: A meta-analysis. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 20(4), 1179-1196. <https://doi.org/10.1007/s10902-018-9990-2>
- Serpell, B. G., Harrison, D., Dower, R., & Cook, C. J. (2023). The under representation of women coaches in high-performance sport. *International Journal of Sports Science & Coaching*, 18(4), 1320-1332. <https://doi.org/10.1177/1747954123116022>

- Stamatis, A., Grandjean, P., Morgan, G., Padgett, R. N., Cowden, R., & Koutakis, P. (2020). Developing and training mental toughness in sport: A systematic review and meta-analysis of observational studies and pre-test and post-test experiments. *BMJ Open Sport & Exercise Medicine*, *6*(1), e000747. <https://doi.org/10.1136/bmjsem-2020-000747>
- Stander, F. W., De Beer, L. T., Stander, M. W., Mostert, K., & Coxen, L. (2017). A strength-based approach to athlete engagement: An exploratory study. *South African Journal for Research in Sport, Physical Education and Recreation*, *39*(1), 165-175.
- Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise*, *16*(1), 3-14. <https://doi.org/10.1016/j.psychsport.2014.07.004>
- United States Olympic & Paralympic Committee. (2024). *Team USA eligibility*. <https://www.usopc.org/TeamUSA-Eligibility>
- Williamson, O., Swann, C., Bennett, K. J. M., Bird, M. D., Goddard, S. G., Schweickle, M. J., & Jackman, P. C. (2022). The performance and psychological effects of goal setting in sport: A systematic review and meta-analysis. *International Review of Sport and Exercise Psychology*, 1-26. <https://doi.org/10.1080/1750984X.2022.2116723>
- Zhang, S., Huang, J., & Wang, H. (2024). Influencing factors of women's sports participation based on Self-Determination Theory: A systematic review and meta-analysis. *Psychology Research and Behavior Management*, *17*, 2953-2969. <https://doi.org/10.2147/PRBM.S465903>

Appendices

Top Five CliftonStrengths® Among Athletes and Coaches Subgroups

Group	Strength 1 <i>n</i> (%)	Strength 2 <i>n</i> (%)	Strength 3 <i>n</i> (%)	Strength 4 <i>n</i> (%)	Strength 5 <i>n</i> (%)
Tier 3 [^] (<i>n</i> = 317)	Restorative®	Achiever®	Adaptability®	Competition®	Relator®
Tier 4 [^] (<i>n</i> = 948)	Achiever®	Restorative®	Adaptability®	Competition®	Strategic®
Tier 5 [^] (<i>n</i> = 251)	Achiever®	Restorative®	Learner®	Competition®	Relator®
Women	Achiever®	Restorative®	Adaptability®	Competition®	Harmony®
Men (<i>n</i> = 347)	Achiever®	Restorative®	Learner®	Competition®	Relator®
Women – Athletes	Achiever®	Restorative®	Adaptability®	Competition®	Harmony®
Women – Coaches	Achiever®	Restorative®	Harmony®	Relator®	Activator® /
Men – Athletes (<i>n</i> = 134)	Competition®	Restorative®	Achiever®	Relator®	Strategic®
Men – Coaches (<i>n</i> = 213)	Achiever®	Learner®	Relator®	Restorative®	Context®

Note. Athletes *n* = 1,100. Coaches *n* = 406. Denominators for percent calculations are determined by the total sample size listed in column 1 of each respective row. Summative discrepancies may be due to rounding. [^]1 = high school, club; 2 = college; 3 = Olympian, professional, USA team.

Chi-Square Tests of CliftonStrengths® Domains Among Athletes and Coaches Subgroups

Comparison groups	Executing		Influencing		Relationship building		Strategic thinking		<i>df</i>	χ^2	<i>p</i>	<i>ES</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%				
Level [^]	—	—	—	—	—	—	—	—	6	6.56	.36	.05
1	119	37.54	45	14.20	100	31.55	53	16.72	—	—	—	—
2	390	41.14	143	15.08	275	29.01	140	14.77	—	—	—	—
3	104	41.43	32	12.75	65	25.90	50	19.92	—	—	—	—
Team vs. individual	—	—	—	—	—	—	—	—	3	19.00	< .001	.11
Athlete	—	—	—	—	—	—	—	—	3	16.46	< .001	.12
Coach	—	—	—	—	—	—	—	—	3	3.77	.29	.10
Team	560	41.36 ^a	198	14.62	398	29.39 ^a	198	14.62 ^b	—	—	—	—
Individual	53	32.72 ^a	22	13.58	42	25.93 ^a	45	27.78 ^b	—	—	—	—
Non-contact vs. contact	—	—	—	—	—	—	—	—	3	0.07	.99	.01
Non-contact	532	40.43	192	14.59	382	29.03	210	15.96	—	—	—	—
Contact	81	40.50	28	14.00	58	29.00	33	16.50	—	—	—	—
Gender	—	—	—	—	—	—	—	—	3	20.78	< .001	.12
Athlete	—	—	—	—	—	—	—	—	3	10.48	.02	.10
Coach	—	—	—	—	—	—	—	—	3	9.96	.02	.16
Women	493	42.17 ^a	175	14.97 ^a	340	29.08 ^a	161	13.77 ^b	—	—	—	—
Athlete	399	40.88	155	15.88	289	29.61	133	13.63	—	—	—	—
Coach	94	48.70	20	10.36	51	26.42	28	14.51	—	—	—	—
Men	120	34.58 ^a	45	12.97 ^a	100	28.82 ^a	82	23.63 ^b	—	—	—	—
Athlete	43	32.09 ^a	27	20.15 ^b	34	25.37 ^a	30	22.39 ^{a,b}	—	—	—	—
Coach	77	36.15 ^a	18	8.45 ^b	66	30.99 ^a	52	24.41 ^{a,b}	—	—	—	—

Note. Athletes $n = 1,100$. Coaches $n = 406$. *ES* = Cramer's *V*. Percentages are summed across rows and may not sum to 100 due to rounding. Athlete vs. coach subgroup analyses are displayed only when the primary comparison level is statistically significant at the $\alpha = .05$ level. Superscript letter *a* denotes a subset of CliftonStrengths® domains whose column proportions statistically significantly differ from that of superscript letter *b* across the same row. Superscript letter *a,b* denotes a subset of CliftonStrengths® domains whose column proportions statistically significantly differ from that of superscript letter *a* and superscript letter *b* across the same row. [^]1 = high school, club; 2 = college; 3 = Olympian, professional, USA team.