COACH LEADERSHIP STYLE, COACH-ATHLETE RELATIONSHIPS AND ENGAGEMENT IN TEAM SPORTS: THE MEDIATING ROLE OF ATHLETE BURNOUT

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Abstract

This study aims to investigate the relationship between coach leadership style (CLS), coach-athlete relationships (CAR), athlete's burnout (AB) and athlete's engagement (AE) in team sports. The correlational method was adopted in this research. There were 93 athletes from several types of team sports were involved as participants in this research. This research used several type of instruments, included the coach leadership scale for sport (CLSS), coach–athlete relationship questionnaire (CART-Q), athlete burnout scale (ABS) and athlete engagement questionnaire (AEQ). Pearson correlation matrix was used in this research to investigate the availability of a significant relationship between each variable. Apart from that, path analysis was used to observe relationship modeling between variables. The findings showed that there was a significant relationship between each variable ($p < 0.05$). The structural equation modeling showed CLS had a direct influence on AB ($\beta = 0.363$, $p < .001$), CAR ⇒ AB ($\beta = 0.621$, $p < .001$), CLS ⇒ AE ($\beta = 0.280$, $p = 0.001$), CAR ⇒ AE ($\beta = 0.229$, $p = 0.019$) and AB ⇒ AE ($\beta = 0.484$, $p < .001$). Thus, this study highlights the important role of CLS and CAR are reducing the risk of AB symptoms and improving AE in team sports.

Keywords: Athletes's burnout, Coach Leadership style, Coach-athlete relationships, engagement

Manuscrito recibido: 25/12/2023
Manuscrito aceptado: 30/12/2023

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Introduction

In the modern era, team sports (e.g., handball, football, volleyball, basketball) are required to achieve the highest achievements, therefore coach has very important role and contributes greatly to the success or failure of athletes (Davis et al., 2022; de Albuquerque et al., 2021). Data recorded that coach can influence athletes' performance during training and competition (Gu et al., 2023; Sumarsono et al., 2023). Currently, there are several factors that are considered important for athlete performance and becomes the focus among coaches, namely athlete burnout (AB) (Sukur et al., 2023), athlete engagement (AE), coach leadership style (CLS), coach-athlete relationships (CAR).

AB is an important factor and get attention in recent decades (Appleby et al., 2022; Martínez-Alvarado et al., 2021). AB is a physical and emotional exhaustion (Glandorf et al., 2022; Tang et al., 2022), devaluation of sports (Madigan et al., 2022; Woods et al., 2022) and reduced accomplishment (Yang et al., 2023). Basically, team sports have very high competition (Conesa et al., 2020), which might trigger burnout in athletes. Therefore, burnout must be considered as a major threat and has a negative impact on athlete performance (Wilczyńska et al., 2022). Several previous studies highlighted that it is very important to prevent or reduce burnout in athletes (Ferreira et al., 2021; Peraita-Costa et al., 2020; Yıldırım et al., 2023). This condition might be due to several factors, for example long and intensive training programs, lack of variety and innovation in training, pressure from competition and sports organizations (Li et al., 2019), and lack of social support (Fan et al., 2023). High burnout is believed to have several negative impacts on athletes, for example causing high stress, bad personal relationships (Nicholls et al., 2022), poor mental health (Yang et al., 2023), the main cause of athletes withdrawing (Olsson et al., 2022; (Shang & Yang, 2021), absence from training until low performance (De Francisco et al., 2020; Morales-Suárez-Varela et al., 2023). In addition, recent research by Santos-Afonso et al. (2023), reported that athletes with high levels of burnout caused lose motivation, enjoyment and satisfaction in exercising. Meanwhile, data from a previous study reported that 9% of athletes who took part in competition with a high competitive level were likely to experience burnout symptoms (Raanes et al., 2019).

In team sports, AE is claimed to be able to improve athlete performance. AE is a concept that explains cognition, attitudes and positive emotions in athletes to achieve a goal (Hanifah et al., 2022). In AE there are four interrelated dimensions, namely: vigor, dedication, confidence and enthusiasm (De Francisco et al., 2020; Graña et al., 2021; Kuokkanen et al., 2021). Previous studies have believed that AE is an important element for athletes in carrying out competitive sports activities (Guo et al., 2022), for example AE has been positively proven to lead to higher attendance levels (Graña et al., 2021), and ultimately can improve performance exercise significantly (Gu et al., 2022). Recent research from Raimundi et al. (2023), reported that the presence of high AE can trigger much greater satisfaction, enjoyment and motivation in exercising. Meanwhile, low engagement in athletes can produce several negative impacts, for example low motivation in physical activity and sports (Gu et al., 2023). Meanwhile, Rusmanto et al. (2023), explained that well-developed AE can influence success in mastering technical performance in the sport of soccer.

Currently, research on the factors that influence the success rate of athletes in team sports is still very limited and needs to be investigated accurately. CLS is claimed to be related to several aspects such as AB (Choi et al., 2020) and AE (Gu et al., 2023). CLS can be interpreted as a characteristic or style of a coach in training athletes (Sumarsono et al., 2023). CLS has several leadership styles, as reported by previous studies that there are five styles that can be applied by a coach in the training process (Hartoto et al., 2023). First, autocratic style or also called authoritarian, a coaching style that provides firm instructions that must be followed by each athlete without any complaints (Lobo, 2022). Second, democratic is a leadership style that gives freedom and involves athletes to determine the goals and results of training achievements (Sumarsono et al., 2023). Third, social support is a leadership style that shows positive behavior such as support or attention to athletes (González-García et al., 2019; Lisá et al., 2023). Fourth, positive feedback is a coach's leadership style by providing lots of positive feedback such as encouragement (Wang et al., 2021). Fifth, appreciating athletes' hard work or praise in training sessions (de Albuquerque et al., 2021; Hartoto et al., 2023). CLS is an innovation in the sports training process that create a different training climate (Čaprić et al., 2023), and it greatly influences the results of a training program implemented by the coach (Caruzzo et al., 2021). CLS has been proven to provide many positive benefits for athletes, for example motivation (Calvo & Topa, 2019), and commitment (Hartoto et al., 2023) to carry out training and improves sports performance (Álvarez et al., 2019; Erikstad et al., 2021). Additionally, Fouraki et al. (2020), reported that CLS dimensions showed a positive correlation with athlete satisfaction. In addition, CLS with the democratic type was found to have a positive relationship with CAR, motivation and satisfaction (Jin et al., 2022).

In the last few decades, CAR is claimed to create a major contribution in achieving high achievements in team sports (Gu et al., 2023). CAR can be interpreted as an interpersonal relationship conceptualized by three main components, namely closeness, commitment and complementarity. Closeness is related to emotional feelings with coach which are shown through behavior of respect, trust, liking and appreciation (do Nascimento Junior et al., 2020). Commitment is related to the thought of maintaining a harmonious relationship (Simons & Bird, 2023). Complementarity relates to complementary, cooperative and

reciprocal behavior (Li et al., 2021). A high score of CAR can create harmonious and good relationship behavior between coaches and athletes, so that athletes will be much more motivated and actively involved in training. According to Jin et al. (2022), in sports, athletes are required to spend more time with their coach than their family, so that a well-developed CAR will be the main success factor in implementing a training program and impact on achieving optimal performance. There are many examples of successful CARs, for example Cristiano Ronaldo and Sir Alex Ferguson or Michael Phelps and his coach Bowman (Gu et al., 2023). Several previous studies reported that CAR is significantly related to high athlete performance in competitive sports (Davis et al., 2018; Lee et al., 2023). Meanwhile, other research has found that low score of CAR has been claimed to have a negative impact on athlete performance (Foulds et al., 2019).

Based on our current knowledge, there is still limited previous research that investigated the relationship simultaneously between CLS, CAR, AB and AE of athletes in team sports. Apart from that, this research involved athletes from several types of team sports such as handball, football, volleyball and basketball, so this can be something new and different from previous research. Therefore, our study aims to investigate the relationship between CLS, CAR, AB and AE among athletes in team sports. We hypothesize that:

Hypothesis 1 (H1): There is a significant relationship between CLS and AB.

Hypothesis 2 (H2): There is a significant relationship between CAR and AB.

Hypothesis 3 (H3): There is a significant relationship between CLS and AE.

Hypothesis 4 (H4): There is a significant relationship between CAR and AE.

Hypothesis 5 (H5): There is a significant relationship between AB and AE.

A summary of all hypotheses is shown in Figure 1.

Material and methods

Ethical Considerations

All athletes agreed to be involved in this research by signing informed consent. In addition, this research was carried out in accordance with the Declaration of Helsinki and the protocol was approved by the Ethics Committee of the DKI Jakarta (Indonesia) Youth and Sports Service with number: 567/INSC-DKI Jakarta /2024.

Participants

We involved male athletes from several types of team sports such as handball, football, volleyball and basketball from the Indonesian National Sports Committee (INSC)-DKI Jakarta (Indonesia). They were selected by following the inclusion criteria, namely: (i) not participating in other activities outside the program, (ii) healthy and (iii) not experiencing injuries. We calculated a priori power statistics using G*Power (Version 3.1.9.4, University of Kiel, Kiel, Germany). The results of these calculations showed that the required sample size was a minimum of 84 participants to have sufficient power (> 0.80) based on the chosen alpha of 0.05. 93 athletes were selected and involved in this research. Participant information is presented in Table 1.

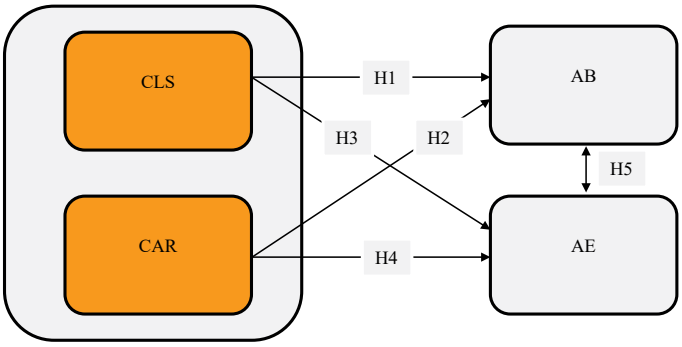

Figure 1. The hypothesized model.

Instruments

CLS. The Coach Leadership Scale for Sport (CLSS) was used to measure coach leadership behavior (Sumarsono et al., 2023). This CLSS consists of 40 question items (Fouraki et al., 2020), but in this study it has been modified became 20 question items (Indonesian version of CLSS) from five dimensions, namely: (i) training and instructions (4 items), (ii) democratic behavior (4 items), (iii) autocratic behavior (4 items), (iv)social support (4 items) and (v) positive feedback (4 items). This question item used a Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

CAR The Coach–Athlete Relationship Questionnaire (CART-Q) was adopted to assess athletes' perceptions of the athlete–coach relationship (Fouraki et al., 2020). CART-Q has 11 question items from three dimensions: (i) athletes' closeness (4 items), athletes' commitment (3 items) and athletes' complementarity (4 items) (Gu et al., 2023). This questionnaire used a 7 point Likert scale. The CART-Q used in this research is in the Indonesian version.

Athletes's burnout. The Athlete Burnout Scale (ABS) was adopted in this study to observe athletes' perceptions related to burnout in sports (Yang et al., 2023). ABS has three dimensions, namely: (i) physical/emotional fatigue (4 items), (ii) devaluation of sports (4 items) and (iii) low accomplishment (4 items). This questionnaire was answered using a Likert scale from "point 1 = Strongly Disagree" to "5 = Strongly Agree". The ABS used in this research has been converted into an Indonesian version.

Athletes's engagement. The Athlete Engagement Questionnaire (AEQ) is a questionnaire that can be used to assess athletes' perceptions regarding involvement in sports. This questionnaire has been amended in the Indonesian version. This AEQ has 16 question items from four main dimensions, namely: (i) vigor (4 items), (ii) dedication (4 items), (iii) confidence (4 items) and (iv) enthusiasm (4 items) (Guo et al., 2022). Examples "I am passionate about training and competition" and "I will commit to practicing sports". This questionnaire was answered using a Likert scale from "point 1 = Strongly Disagree" to "5 = Strongly Agree".

Validity and reliability of the instrument

In this research, all instruments in the questionnaires form were analyzed to obtain validity and reliability values. The test results are presented in Table 2.

Design and Procedures

This correlational research was carried out on 1st and 3rd January 2024 at the Indonesian National Sports Committee-DKI Jakarta (Indonesia). Data collection was carried out after requesting cooperation and approval from parents, coaches/managers and athletes. First, the research team sent the research objectives and procedures via Whatsapp to coaches and athletes in several types of sports such as handball, football, volleyball and basketball. Then the coaches and participants (athletes) were contacted via Whatsapp to gather at the Indonesian National Sports Committee-DKI Jakarta building. In addition, all athlete parents have given written consent for their children to take part in all program activities in this study.

The first activity was on 1st January 2024, all participants filled in the CLS and CAR from 08.30-10.00 am. The final meeting was held on January 3 2024, all participants filled in AB and AE from 08.00 to 10.00 am. After participants have completed it, the questionnaires can be collected as soon as possible to the research team. This activity was supervised by the research team, so that the

Table 1. Information on participant characteristics (n = 93).

Characteristic	Handball	Volleyball (n = 21)	Football	Basketball
	(n = 25)		(n = 22)	(n = 25)
Age (year)	18.0±0.76	18.9±2.48	19.0±2.40	18.8±2.29
Height (cm)	160±3.91	161±4.10	162±3.91	162±3.68
Weight (kg)	57.9±2.39	58.7±2.27	60.1±2.53	60.2±2.40
Practice experience (year)				
1 year	10(40%)	6(29%)	7(32%)	13(52%)
2 years	8(32%)	12(57%)	9(41%)	7(28%)
3 years	3(12%)	2(10%)	4(18%)	2(8%)
4 years	4(16%)	1(4%)	2(9%)	3(12%)
Body mass index (kg/m2)	21.8±1.07	22.1±1.30	22.6±1.05	22.3±1.28

objectivity of the answers can be maintained.

Statistical Analysis

Descriptive statistics were presented in mean, standard deviation, skewness and kurtosis. Data normality was tested using Shapiro-Wilk analysis and it was assumed that the data was normally distributed (all, $p > 0.05$). In addition, validity and reliability testing of all variables was carried out in this study. Lastly, the Pearson correlation matrix was used in this study to obeserve the significant relationship between each variable. Apart from that, path analysis was used to investigate the relationship model between variables. All data were analyzed using the Jamovi 23.28 statistical calculation and the significance level used was 0.05.

Table 2. Validity and Reliability analysis.

Variables	Dimensions	Item	Validity	Cronbach's α
CLS	Training and instructions	4	0.979	0.991
	Democratic behavior	4		
	Autocratic behavior	4		
	Social support	4		
	Positive feedback	4		
CAR	Athletes' closeness	4	0.982	0.99
	Athletes' commitment	3		
	Athletes' complementarity	4		
AB	Physical/emotional exhaustion	4	0.982	0.991
	Devaluation of sports	4		
	Low accomplishment	4		
AE	Vigor	4	0.983	0.99
	Dedication	4		
	Confidence	4		
	Enthusiasm	4		

Note. CLS = Coach leadership style, CAR = Coach-athlete relationships, AB = Athlete burnout, AE = athlete engagement.

Table 3. M, SD, skewness, kurtosis, and correlations of scale composite scores.

Variables	1		2		3		4	
CLS	Pearson's r	—						
	df	—						
	p	—						
CAR	Pearson's r	0.973	***	—				
	df	91		—				
	p	< .001		—				
AB	Pearson's r	0.967	***	0.974	***	—		
	df	91		91		—		
	p	< .001		< .001		—		
AE	Pearson's r	0.971	***	0.973	***	0.978	***	—
	df	91		91		91		—
	p	< .001		< .001		< .001		—
M		60.7		60.3		60.1		60.3
SD		8.59		8.67		8.19		8.49
Skewness		0.8		0.86		0.69		0.7
Kurtosis		0.43		0.65		0.125		0.32
Shapiro-Wilk		0.231		0.102		0.127		0.189

Results

As shown in Table 3, it shows the mean (M), standard deviation (SD), skewness, kurtosis and correlation of the combined scores. Correlation analysis composite scores showed a significant correlation between variables ($p < .001$).

As shown in Table 4, the results of the relationship analysis for each path obtained the first result, namely that the CLS model was a significant predictor of AB ($\beta = 0.363$, $p < .001$), CAR of AB ($\beta = 0.621$, $p < .001$), CLS against AE ($\beta = 0.280$, $p = 0.001$), CAR against AE ($\beta = 0.229$, $p = 0.019$) and AB against AE ($\beta = 0.484$, $p < .001$) Figure 2.

Discussion

Our study aims to investigate the relationship between CLS, CAR, AB and AE in athletes in team sports.

Relationship between CLS and AB

The first hypothesis proved that there was a relationship between CLS ⇒ AB. The reason is in team sports, the leadership style applied by a coach is closely related to the AB level, for example if there were better and more types of CLS, the more likely it would reduce or even remove AB in intense training sessions. These results are in line with previous research which reported that CLS with the type of training and instructions, social support, positive feedback can produce much lower AB in exercise (González-García et al., 2019). In this case, Hartoto et al. (2023), reported similar results, CLS are the right solution for coaches to create a fun and meaningful training atmosphere for athletes to achieve optimal results. Basically, high AB in the training process occurs due to external factors, namely coach's leadership style (Choi et al., 2020), for example a bad and stressful leadership style tends to produce negative impacts (Martínez-Moreno et al., 2021), such as making athletes bored, unmotivated (Sumarsono et al., 2023), and ultimately burnout (Fransen et al., 2019). Meanwhile, internal factors include motivation (Li et al., 2023). Meanwhile, evidence from other studies reported the advantages of CLS such as: it can create harmonious relationships (Huang et al., 2021; Romão et al., 2022), and mutual support between athletes and coaches, even leads to low AB (Ha et al., 2021). In addition, CLS with the social support type is frequently used and positively related to reducing the level of burnout symptoms (Kelly & Hearld, 2020; McPherson et al., 2022).

Relationship between CAR and AB

Our second hypothesis proved the relationship between CAR ⇒ AB. This is because CAR is an element that can trigger closeness, commitment, and complementarity behavior between athletes and coaches (Simons & Bird, 2023). Basically, a good relationship between athlete and coach can produce an effective training process (Freire et al., 2023), while a bad relationship can be the main factor in triggering AB symptoms (Li et al., 2021). This result is in line with research by Choi et al. (2020), which reported that conflict between athletes and coaches is a dangerous symptom, because it is the trigger for

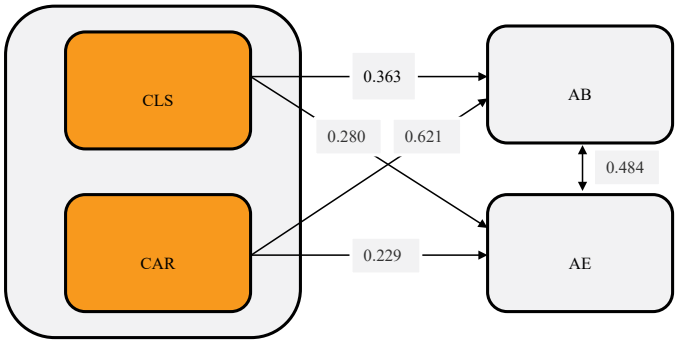

Figure 2. Proposed structural model of the associations between variables, significant paths at $p < 0.05$.

Table 4. Path coefficients.

Path	Estimate	SE	LL	UL	β	z	p
H1: CLS ⇒ AB	0.346	0.0901	0.1694	0.522	0.363	3.84	< .001
H2: CAR ⇒ AB	0.586	0.0892	0.4114	0.761	0.621	6.57	< .001
H3: CLS ⇒ AE	0.276	0.0857	0.1085	0.444	0.28	3.23	0.001
H4: CAR ⇒ AE	0.224	0.0954	0.0373	0.411	0.229	2.35	0.019
H5: AB ⇒ AE	0.502	0.0916	0.3226	0.682	0.484	5.48	< .001

Note. CLS = Coach leadership style, CAR = Coach-athlete relationships, AB = Athlete burnout, AE = athlete engagement, β = standardized regression weight, SE = Standard error, LL = Lower limit, UL = Upper limit, CI = Confidence interval, * $p < 0.05$.

burnout. In team sports, relationships with athletes and coaches are very important involving communication (Lisinskiene & Lochbaum, 2022), and two-way interactions (Jin et al., 2022). If athletes can communicate and interact effectively with coaches, and even have good closeness and complement each other, it can fulfill their psychological needs and reduce the risk of burnout (Choi et al., 2020). Other research supported the results of this research, maintaining relationships such as closeness, commitment and complementarity is the right strategy, which can reduce fatigue (Fan et al., 2023). Meanwhile, recent research confirms that poor relationships between athletes and coaches are the main predictors of athlete burnout (e.g., reduced sense of accomplishment, devaluation, emotional and physical exhaustion) (Lee et al., 2023; Simons & Bird, 2023). On the other hand, Haugan et al. (2021), reported that the quality of the relationship between coaches and athletes must be mutually beneficial, respectful, necessary and complementary, so that AB symptoms can be managed well.

Relationship between CLS and AE

Our third hypothesis was proven that there was a relationship between CLS ⇒ AE. This is because CLS presents a training climate with various training styles such as: (i) training and instructions, (ii) democratic behavior, (iii) autocratic behavior, (iv) social support and (v) positive feedback (Calvo & Topa, 2019; Hartoto et al., 2023), which has a potential to increase involvement among team sport athletes. This result is in line with previous research which showed that CLS is an important element which provide a conducive training process and have a positive impact on athletes' psychological behavior (Huang et al., 2021), but on the contrary, a poor leadership style (e.g., easily anxious, not confident, not supportive) (Caruzzo et al., 2021), and full of pressure can have negative results on sports involvement (Cruz & Kim, 2023). In addition, according to Jin et al. (2022), the leadership style must be adjusted towards conditions and characteristics of the athletes, for example early teens athletes need to apply an autocratic style so that they have the opportunity to achieve successful results. Mistakes in applying a leadership style will cause dissatisfaction from athletes (e.g. involvement and low satisfaction) (Jawoosh et al., 2022). Basically, the quality of a coach's leadership greatly influences the achievement of planned targets (Oh & Yoo, 2023), for example it will create a high involvement of athletes if they favlr the leadership style used by the coach (Sumarsono et al., 2023), and a bad style will cause a low level of involvement during training sessions and even leaving or interrupting their careers from sports (Rusmanto et al., 2023).

Relationship between CAR and AE

Our fourth hypothesis proved the relationship between CAR ⇒ AE. CAR is a concept that explains the relationship between athletes and coaches in sports training activities. If the relationship is good, athlete will have a higher involvement in intense training. Findings from previous studies support this research, CAR can predict athlete involvement significantly and positively, for example CAR with dimension of closeness which is related to mutual trust, respect (Ahmad et al., 2021; Davis et al., 2018), mind-related commitment to maintaining harmonious relationships (López de Subijana et al., 2021; Simons & Bird, 2023), and complementarity (Haugan et al., 2021), can be key factors in encouraging athlete engagement to remain committed to practicing sports (Gu et al., 2023). On the other hand, recent research has proven that CAR and its dimensions can significantly influence several aspects such as physical (Foulds et al., 2019), motor and psychosocial (e.g., engagement) development of athletes (do Nascimento Junior et al., 2020).

Relationship between AB and AE

Our fifth hypothesis proved that there was a relationship between AB ⇒ AE. A high AB has several negative impacts such as stress and anxiety (Nicholls et al., 2022), thus cause athletes to withdraw from practicing sports (Yang et al., 2023). Conversely, AB that can be managed well or in the low category can produce positive impacts (De Francisco et al., 2020), including increasing motivation levels (Shang & Yang, 2021), and increasing athlete training engagement (Graña et al., 2021). Meanwhile, other research reported that to prevent burnout, elements of passion and involvement are needed (Ariani, 2021). Thus, the findings in this study confirm that high or low involvement of athletes in sports training sessions was highly correlated with burnout levels.

Conclusions

Based on the study results, we highlight that there was a significant relationship between the variables CLS, CAR, AB and AE among athletes in team sports. Thus, this research contributes important information for coaches, athletes and all practitioners in team sports about the importance of CLS and CAR for AB and AE. However, according to the relationship model presented good CLS and CAR were the main predictors of lower burnout symptoms and created higher involvement in sports training. However, limitations in this research still exist; this research only focused on analyzing the relationship between variables and only involved one gender, namely men, so it is possible to limit the generalizability of the results. Thus, it is recommended that in the future, researchers need to involve participants (athletes) from two genders, namely men and women.

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