

From Mat to Mastery: Lifelong Skills Learned through Brazilian Jiu-Jitsu

Dulce Ruelas^{1,*}, Heather Noblitt², Danielle Henderson³,
and Jose Muñoz⁴

ABSTRACT

This study investigates the potential for Brazilian Jiu-Jitsu (BJJ), a close-contact martial art, to cultivate real-world life skills beyond physical self-defense. Conducted in a Phoenix, Arizona, gym setting, the research employed a quantitative experimental design with in-person surveys to assess the transferability of BJJ-learned abilities and experiences into daily life strategies. Two surveys were developed, targeting adult participants, young adults, and the parents/legal guardians of youth enrolled in BJJ classes. With a participation rate of 62.9% from the gym's membership base, the study yielded significant findings. Notably, all participants reported a strong sense of community fostered by the BJJ program. Beyond this social benefit, the research suggests that BJJ can play a role in mitigating feelings of anxiety and depression. The analysis revealed a positive correlation between BJJ participation and psychological and emotional well-being, with participants reporting a transfer of life skills learned on the mats to real-world situations. These findings contribute to the growing body of evidence on the holistic benefits of martial arts, suggesting that BJJ can extend its positive influence beyond the realm of physical self-defense and into the emotional and psychological well-being of its practitioners.

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¹ Associate Professor, College of Nursing and Health Care Professions, Grand Canyon University, USA.

² Graduate Student, College of Nursing and Health Care Professions, Grand Canyon University, USA.

³ Assistant Professor, College of Nursing and Health Care Professions, Grand Canyon University, USA.

⁴ Professor, 12stjiujitsu, USA.

*Corresponding Author:
e-mail: dulce.ruelas@gcu.edu

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1. INTRODUCTION

Brazilian Jiu-Jitsu (BJJ) is a grappling-based martial art focused on ground fighting moves for self-defense, allowing participation in local, national, and international competitions (Andreato *et al.*, 2017). As a close-contact sport, BJJ relies on ingenuity and flexibility to anticipate and react to an opponent's moves, using force and gravity to pin or submit them. This demands physical and emotional adaptability to navigate challenging combat situations, fostering discipline and confidence in participants. Practicing BJJ involves learning Portuguese, as moves and techniques retain their original names during instruction (Riquelme-Hernández *et al.*, 2022). Beyond competition, research highlights BJJ's extensive benefits for both body and mind.

BJJ embodies commitment, concentration, and respect, with a belt-ranking system from white to black, indicating levels of experience and dedication (Andreato *et al.*, 2017). This hierarchy motivates sustained engagement, aiding emotional regulation and reinforcing positive feedback and appraisal (Kendellen & Camiré, 2020). The discipline and efficiency developed in BJJ extend beyond the gym, helping participants overcome external obstacles (Doğan, 2015). Interactions among team members foster group cohesion and shared goals (Rodrigues *et al.*, 2019). Wearing the traditional Gi in competitions underscores respect and commitment, reminding practitioners that BJJ is a sport of control and spiritual flow, not violence (Weinberger & Burraston, 2021).

BJJ engages the entire body, promoting weight loss, improved cardiovascular health, and enhanced strength, coordination, and flexibility. However, the true power of BJJ may lie in its impact on mental well-being. Studies have shown that BJJ training can significantly reduce stress and anxiety while boosting self-esteem and self-efficacy in adults (Tarver & Levy, 2023). This therapeutic effect extends to individuals with special needs and those struggling with mental health challenges, including anxiety,



depression, and PTSD (Blomqvist Mickelsson, 2021; Willing et al., 2019). Military veterans, for example, find BJJ to be a valuable tool for managing aggression and transitioning back to civilian life.

Symptoms of mental disorders, including anxiety and depression, can be reduced through exercise. Martial arts like BJJ have the added benefit of relieving stress under pressure while enhancing mindfulness. Mindfulness practice consistently improves mindfulness scores among various sports disciplines (Bühlmayer et al., 2017).

Competition anxiety before a match is common for new BJJ participants involved in local and state tournaments. However, after winning against an opponent, data has shown that both cognitive and somatic anxiety decreases for beginner participants (Faro et al., 2020). BJJ acts as a transformative instrument to push participants outside their comfort zone to overcome feelings of stress and doubt. Athlete mood profiles indicate that factors such as uneasiness and tension can negatively impact a student's performance (Silva et al., 2019). Control over one's mood results in a conscious state that allows participants to approach problems with new perspectives.

The presence of self-control supports positive behavior modes and will enable participants to manage their attention and attitudes (Sugden, 2021). Understanding one's mood during BJJ is necessary to prevent injury and ensure that participants are making the most of their session. This perception shifts to provide individuals with the required self-reflection to organize mood states outside of gym settings and recognize one's attitude to prepare and adjust for unknown scenarios in home, work, and outside settings.

Beyond the physical and mental benefits, BJJ offers a wealth of advantages specifically for adolescents. Research by Bueno et al. (2022) suggests BJJ training can significantly improve self-discipline and self-confidence in young people. This is likely due to the structured environment and clear goals BJJ provides. As adolescents navigate their developing identities, the sense of accomplishment from mastering techniques and overcoming challenges on the mat translates to increased self-belief. Additionally, the emphasis on respect and perseverance within BJJ fosters self-discipline, a valuable skill that spills over into academics and other aspects of their lives.

Chinkov and Holt (2016) discuss that Brazilian Jiu-Jitsu (BJJ) can sustain the transference of life skills beyond gym environments, which are crucial for coping with everyday scenarios involving self-efficacy, communication, decision-making, and problem-solving (Newman, 2020). Positive youth development (PYD) programs focus on this skill transference, influencing psychological and social growth in children and young adults through techniques such as time management, empathy, and emotional intelligence. These abilities must be applied to environments outside the gym to be considered life skills (Chinkov & Holt, 2016). BJJ can foster these skills both implicitly and explicitly, improving self-esteem, goal-setting, and emotional management (Bean et al., 2018). Coaches play a vital role in motivating participants and connecting with them to overcome limitations, thereby promoting emotional and psychological well-being. Establishing a positive and communicative environment, supporting self-efficacy, setting attainable goals, and creating learning opportunities from mistakes are essential for maximizing life skill absorbance in BJJ (Bean et al., 2018).

2. THEORY OF PLANNED BEHAVIOR

Brazilian Jiu-Jitsu (BJJ) is distinctive in its social nature and can act as an agent of change for individuals seeking meaningful and supportive relationships. This aligns with the Theory of Planned Behavior (TPB), which includes factors such as subjective norms and perceived control that influence attitudes and behavioral goals (Glanz et al., 2015). TPB suggests that a person's intention to engage in a specific behavior is the strongest predictor of their actual behavior. In BJJ, three key factors—attitude, subjective norm, and perceived behavioral control—drive this intention. Participants' positive attitudes towards BJJ, shaped by the enjoyment and health benefits of the sport, along with the supportive camaraderie within gyms, motivate them to continue practicing. Social pressure, or subjective norm, also plays a role, as seeing friends or family enjoy BJJ can encourage others to try it (Ajzen, 1991). Additionally, perceived behavioral control (PBC), which is boosted by a beginner-friendly atmosphere and gradual progress, helps individuals feel confident in their ability to succeed in BJJ.

Viewing BJJ's social and emotional benefits through the TPB lens highlights its impact on self-confidence, community involvement, respect for others, and stress reduction. Success in BJJ training can reinforce positive attitudes, boosting self-confidence and continued participation. The collaborative nature of BJJ gyms fosters a sense of community, strengthening subjective norms as individuals feel social pressure to participate when surrounded by others who train. This sense of community also enhances PBC by providing support and encouragement. Core principles of BJJ, such as discipline, respect, and sportsmanship, are instilled through training and competition, creating a positive environment. Rituals like bowing, high-fiving, and arm bumping serve as positive social cues, promoting social cohesion through identity fusion and group identification (Kavanagh et al., 2019). These principles,

combined with the physical and mental challenges of BJJ, can be effective for stress management, leading to increased participation and creating a positive cycle of stress reduction. This study aims to measure the relationship between exposure to BJJ and positive associations with emotional and psychological well-being, including parental perceptions of BJJ's impact on their children.

3. METHOD

Two surveys were specifically developed for this study. The first questionnaire was a 20-question survey for adults over 18 participating in BJJ. The second questionnaire was a 16-question survey for parents of children under 18 participating in BJJ. A consent form was created to ensure participants were aware of their rights and the purpose of the study. For participants under 18, the parents completed the questionnaire on their behalf.

A. Sample

At the time of the study, in the summer of 2022, there were 97 active participants at 12streetjiujitsu, of which 60 took part in the survey. 28 of the participants were parents, and 32 of the participants were adults. One adult questionnaire was omitted as a large section of the survey was left incomplete.

B. Instrument

The survey was conducted on paper. The first five questions were demographic questions that pertained to gender, ethnicity, age, marital status, and frequency of participation. The remaining 14 questions asked participants to answer emotional and psychological questions that they felt were associated with BJJ. The survey utilized a Likert scale displaying "Strongly Disagree," "Disagree," "Neither Agree nor Disagree," "Agree," and "Strongly Agree." Example questions include "To what extent do you agree or disagree with the following statement: I have noticed improvement with my confidence after participating in Jiu-jitsu." and "To what extent do you agree or disagree with the following statement: I have noticed improvement in my child's confidence after participating in Jiu-jitsu."

C. Procedure

Participants were given a paper consent form to read that explained in detail the purpose of the study. After agreeing to participate, participants were then given a paper questionnaire to complete.

D. Data Analysis

SPSS statistical analysis software version 28 was used to conduct the analysis. Frequencies were stratified by participant type (parent vs. adult) for all categorical demographic and emotional and psychological benefit variables. Independent samples t-tests were conducted to determine if there was a statistically significant difference in emotional and psychological benefits between adults and parents. $P < 0.05$ was considered statistically significant.

4. RESULTS

Table I presents demographic information of participants, highlighting gender, ethnicity, age distribution, and class participation frequency. Of the participants under 18, 21.4% identified as female, while 78.6% identified as male. The majority of participants (53.6%) identified as Latino, and 21.4% identified as Multiracial. Most participants (46.4%) were between the ages of 5 to 7, with 25% between 11 to 13 years old. Furthermore, 85.7% of participants attended classes 3–5 times per week.

Table II summarizes demographic characteristics for participants over the age of 18, covering gender, ethnicity, age distribution, and class participation frequency. Among the adult participants, 12.5% identified as female, while 87.5% identified as male. 43.8% identified as Hispanic/Latino, and 18.8% as Multiracial. The largest age group (31.3%) was between 23 and 27 years old, while 18.8% were between 38 and 42 years old. Additionally, 62.5% of adult participants attended classes 3–5 times per week.

Table III details the emotional and psychological effects of Brazilian Jiu-Jitsu (BJJ) on adult participants. The majority of participants reported positive benefits, with 87.6% agreeing or strongly agreeing that BJJ improved their confidence and 87.5% agreeing it reduced anxiety. Additionally, 71.9% reported strengthened commitment, 81.3% experienced enhanced mental flexibility, and 100% felt a sense of community. Furthermore, 96.9% agreed that BJJ improved their mood, 100% reported showing more respect, 96.9% experienced a transfer of life skills, and 75% noted improved concentration.

Table IV outlines the emotional and psychological impacts of Brazilian Jiu-Jitsu (BJJ) on youth, reported by parents. Most participants reported significant benefits, with 96.4% agreeing or strongly

TABLE I: DEMOGRAPHIC CHARACTERISTICS OF YOUTH PARTICIPANTS

Variable	Levels	N	%
Gender	Male	22	78.6
	Female	6	21.4
Race	Asian	0	0
	Black/African American	0	0
	Hispanic/Latino	15	53.6
	Multiracial/Multiethnic	6	21.4
	Native Hawaiian/Pacific Islander	0	0
	White	6	21.4
	Another race or ethnicity	1	3.6
Age	0 to 4	2	7.1
	5 to 7	13	46.4
	8 to 10	7	25
	11 to 13	5	17.9
	14 to 16	1	3.6
Marital status	Married	15	53.6
	Widowed	0	0
	Divorced	2	7.1
	Separated	0	0
	Living with a partner	3	10.7
	In a relationship	3	10.7
Frequency of BJJ attendance	Single	5	17.9
	3–5 times per week	24	85.7
	1–2 times per week	2	7.1
	Once every two weeks	1	3.6
	Other	1	3.6

TABLE II: DEMOGRAPHIC CHARACTERISTICS OF ADULT PARTICIPANTS

Variable	Levels	N	%
Gender	Male	28	87.5
	Female	4	12.5
Race	Asian	1	3.1
	Black/African American	3	9.4
	Hispanic/Latino	14	43.8
	Multiracial/Multiethnic	6	18.8
	Native Hawaiian/Pacific Islander	1	3.1
	White	7	21.9
	Another race or ethnicity	0	0
Age	18 to 22	3	9.4
	23 to 27	10	31.3
	28 to 32	3	9.4
	33 to 37	4	12.5
	38 to 42	6	18.8
	43 to 47	2	6.3
	48 to 52	1	3.1
	53 or older	3	9.4
Marital status	Married	8	25
	Widowed	0	0
	Divorced	2	6.3
	Separated	0	0
	Living with a partner	4	12.5
	In a relationship	4	12.5
Frequency of BJJ attendance	Single	14	43.8
	3–5 times per week	20	62.5
	1–2 times per week	8	25
	Once every two weeks	1	3.1
	Other	3	9.4

TABLE III: EMOTIONAL AND PSYCHOLOGICAL BENEFITS OF BJJ AMONG ADULT PARTICIPANTS

Variable	Levels	N	%
Confidence	Strongly disagree	1	3.1
	Disagree	0	0
	Neither	3	9.4
	Agree	10	31.3
	Strongly agree	18	56.3
Anxiety	Strongly disagree	0	0
	Disagree	1	3.1
	Neither	3	9.4
	Agree	11	34.4
	Strongly agree	17	53.1
Commitment	Strongly disagree	0	0
	Disagree	2	6.3
	Neither	7	21.9
	Agree	11	34.4
	Strongly agree	12	37.5
Mental flexibility	Strongly disagree	0	0
	Disagree	1	3.1
	Neither	5	15.6
	Agree	7	21.9
	Strongly agree	19	59.4
Community	Strongly disagree	0	0
	Disagree	0	0
	Neither	0	0
	Agree	4	12.5
	Strongly agree	28	87.5
Mood	Strongly disagree	0	0
	Disagree	0	0
	Neither	1	3.1
	Agree	8	25
	Strongly agree	23	71.9
Respect	Strongly disagree	0	0
	Disagree	0	0
	Neither	0	0
	Agree	6	19.4
	Strongly agree	25	80.6
Life skills	Missing	1	
	Strongly disagree	0	0
	Disagree	0	0
	Neither	1	3.1
	Agree	14	43.8
Concentration	Strongly agree	17	53.1
	Strongly disagree	0	0
	Disagree	0	0
	Neither	8	25
	Agree	12	37.5
	Strongly agree	12	37.5

agreeing that BJJ improved their confidence, 87.5% agreeing it minimized anxiety, and 92.8% indicating it strengthened their commitment. Additionally, 92.9% reported enhanced mental flexibility, and 100% experienced a sense of community. BJJ improved mood for 92.8% of parents, while 78.5% noted increased respectfulness, 96.4% reported life skill transference, and 78.6% saw improvement in concentration. All participants felt a strong sense of community through BJJ participation.

Table V compares the emotional and psychological benefits of Brazilian Jiu-Jitsu (BJJ) between parents and adults, indicating no statistically significant differences in confidence, anxiety, commitment, mental flexibility, or concentration ($p > 0.05$). However, there were significant differences in the sense of community ($p = 0.006$), mood ($p = 0.045$), respect ($p < 0.001$), and life skills ($p = 0.031$). Adults scored higher in community, mood, and respect, while parents had a higher mean score in life skills.

TABLE IV: EMOTIONAL AND PSYCHOLOGICAL BENEFITS AMONG YOUTH

Variable	Levels	N	%
Confidence	Strongly disagree	0	0
	Disagree	0	0
	Neither	1	3.6
	Agree	10	35.7
Anxiety	Strongly agree	17	60.7
	Strongly disagree	0	0
	Disagree	0	0
	Neither	4	14.3
Commitment	Agree	17	60.7
	Strongly agree	7	25
	Strongly disagree	0	0
	Disagree	1	3.6
Mental flexibility	Neither	1	3.6
	Agree	16	57.1
	Strongly agree	10	35.7
	Strongly disagree	0	0
Community	Disagree	0	0
	Neither	2	7.1
	Agree	18	64.3
	Strongly agree	8	28.6
Mood	Strongly disagree	0	0
	Disagree	0	0
	Neither	2	7.1
	Agree	13	46.4
Respect	Strongly agree	13	46.4
	Strongly disagree	0	0
	Disagree	0	0
	Neither	6	21.4
Life skills	Agree	13	46.4
	Strongly agree	9	32.1
	Missing	N/A	N/A
	Strongly disagree	0	0
Concentration	Disagree	0	0
	Neither	1	3.6
	Agree	4	14.3
	Strongly agree	23	82.1
	Strongly disagree	0	0
	Disagree	0	0
	Neither	6	21.4
	Agree	15	53.6
	Strongly agree	7	25

TABLE V: COMPARISON OF EMOTIONAL AND PSYCHOLOGICAL BENEFITS BETWEEN PARENTS AND ADULTS

	Adult mean	Adult SD	Parent mean	Parent SD	t	p
Confidence	4.38	0.91	4.57	0.57	-1.02	0.32
Anxiety	4.38	0.79	4.11	0.63	1.46	0.15
Commitment	4.03	0.93	4.25	0.70	-1.04	0.31
Mental flexibility	4.38	0.87	4.21	0.57	0.86	0.40
Community	4.88	0.33	4.57	0.50	2.76	0.01
Mood	4.70	0.53	4.39	0.63	2.02	<0.001
Respect	4.78	0.42	4.11	0.74	4.27	<0.001
Lifeskills	4.48	0.57	4.79	0.50	-2.21	0.03
Concentration	4.12	0.78	4.04	0.69	0.45	0.66

5. DISCUSSION

The results of this study indicate that Brazilian Jiu-Jitsu (BJJ) provides significant emotional and psychological benefits to its practitioners. The majority of adult participants reported improvements in confidence (87.6%), reduced anxiety (87.5%), strengthened commitment (71.9%), enhanced mental flexibility (81.3%), and improved mood (96.9%). Furthermore, all adult participants felt a strong sense of community (100%) and exhibited increased respect (100%). These findings highlight BJJ's effectiveness in fostering a supportive and respectful environment that promotes mental well-being and resilience. The high percentage of participants experiencing life skill transference (96.9%) suggests that the discipline, focus, and respect learned in BJJ extend beyond the gym into daily life, enhancing overall life satisfaction and functionality.

Parents also reported substantial benefits for their children, with 96.4% noting improved confidence, 87.5% reduced anxiety, 92.8% increased commitment, 92.9% enhanced mental flexibility, and 92.8% improved mood. Like adults, 100% of parents observed a strong sense of community among their children. Although slightly lower than adults, 78.5% of parents agreed that BJJ enabled their children to exhibit respect more frequently, and 96.4% felt it contributed to the transference of life skills. These high percentages underscore the positive impact of BJJ on young practitioners, indicating that the sport helps in developing crucial life skills, emotional regulation, and social bonds.

When comparing adults and parents, there were no statistically significant differences in areas such as confidence, anxiety reduction, commitment, mental flexibility, or concentration, suggesting that BJJ offers similar benefits across different age groups. However, significant differences were noted in community, mood, respect, and life skills. Adults reported higher scores in community ($p = 0.006$), mood ($p = 0.045$), and respect ($p < 0.001$), while parents rated life skills higher ($p = 0.031$). These results imply that while adults may benefit more from the social and emotional aspects of BJJ, children, and young adults might gain more in terms of life skill development. This distinction could be due to the different developmental needs and social dynamics in these age groups. Overall, these findings emphasize BJJ's comprehensive benefits and its potential to enhance various aspects of personal development and well-being across different demographics.

6. LIMITATIONS

This research had several fundamental limitations: time, language, survey administration, and survey validation. The time constraints significantly impacted the study, particularly in terms of language accessibility. The gym membership at the research location included multiple multilingual participants, yet due to the limited timeframe, the survey was not available in several languages, such as Spanish. This language barrier prevented these individuals from participating, potentially omitting valuable data that could have provided a larger sample size and additional insights into the study.

The survey administration method also presented challenges. Conducted in person and on paper, the survey's format limited its reach and efficiency. Incorporating technology, such as virtual links, could have facilitated broader participation and enabled sibling comparisons to explore family dynamics, incentives, and enhanced data collection. Utilizing digital tools could have helped address the issue of incomplete data, as many participants selected "N/A" or circled responses inaccurately. This suggests confusion over the question's wording, indicating a need for clearer instructions in future surveys. Additionally, online surveys can automatically enforce response formats, reducing the likelihood of such errors.

Another significant limitation was the survey's lack of validation and reliability testing. Developed by the researcher, the survey had not undergone rigorous validation processes, which raises concerns about the accuracy and consistency of the responses. Future studies should prioritize the development and use of validated survey instruments to ensure the reliability of the data collected. Despite these limitations, this field of study holds considerable potential to identify new methods for fostering the development of life skills within group martial arts, particularly through more inclusive, efficient, and validated research methodologies.

7. CONCLUSION

The findings of this study underscore the significant emotional and psychological benefits of Brazilian Jiu-Jitsu (BJJ) for both adults and young practitioners. Participants reported substantial improvements in confidence, reduced anxiety, strengthened commitment, enhanced mental flexibility, and a heightened sense of community. Notably, adults experienced a greater boost in mood and respect, while parents observed more pronounced life skill development in their children. These results suggest

that BJJ is effective in promoting mental well-being and fostering essential life skills across different age groups.

However, there are several areas of opportunity for future research. First, further investigation is needed to explore the specific mechanisms through which BJJ fosters life skill transference. Understanding the distinct elements of BJJ training that contribute most to this process could help optimize programs for different age groups. Second, longitudinal studies could provide deeper insights into the long-term effects of BJJ on emotional and psychological health, particularly how sustained engagement influences life outcomes.

Additionally, research could examine the role of different instructional approaches and their impact on the benefits experienced by participants. Comparing traditional versus modern training methods or varying the intensity and frequency of training sessions might reveal optimal strategies for maximizing both physical and mental benefits. Finally, exploring the experiences of diverse populations, including those with varying levels of prior athletic experience or those from different cultural backgrounds, could provide a more comprehensive understanding of BJJ's impact. Such research could help tailor BJJ programs to better serve a wider range of individuals, further enhancing its positive effects on mental and emotional well-being.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
- Andreato, L. V., Lara, F. J. D., Andrade, A., & Branco, B. H. M. (2017). Physical and physiological profiles of Brazilian jiu-jitsu athletes: A systematic review. *Sports Medicine-Open*, 3(1), 1–17. <https://doi.org/10.1186/s40798-016-0069-5>.
- Bean, C., Kramers, S., Forneris, T., & Camiré, M. (2018). The implicit/explicit continuum of life skills development and transfer. *Quest*, 70(4), 456–470. <https://doi.org/10.1080/00336297.2018.1451348>.
- Blomqvist Mickelsson, T. (2021). Brazilian jiu-jitsu as social and psychological therapy: A systematic review. *Journal of Physical Education and Sport*, 21(3), 1544–1552. <https://doi.org/10.7752/jpes.2021.03196>.
- Bueno, J., Andreato, L., Silva, R., & Andrade, A. (2022). Effects of a school-based Brazilian jiu-jitsu programme on mental health and classroom behaviour of children from Abu Dhabi: A randomised trial. *International Journal of Sport and Exercise Psychology*, 21, 1–16. <https://doi.org/10.1080/1612197X.2022.2109184>.
- Bühlmayer, L., Birrer, D., Röthlin, P., Faude, O., & Donath, L. (2017). Effects of mindfulness practice on performance-relevant parameters and performance outcomes in sports: A meta-analytical review. *Sports Medicine*, 47(11), 2309–2321. <https://doi.org/10.1007/s40279-017-0752-9>.
- Chinkov, A. E., & Holt, N. L. (2016). Implicit transfer of life skills through participation in Brazilian jiu-jitsu. *Journal of Applied Sport Psychology*, 28(2), 139–153. <https://doi.org/10.1080/10413200.2015.1086447>.
- Doğan, C. (2015). Training at the gym, training for life: Creating better versions of the self through exercise. *Europe's Journal of Psychology*, 11(3), 442–458. <https://doi.org/10.5964/ejop.v11i3.951>.
- Faro, H. K. C., Tavares, M. P. M., Gantois, P. M. D., Pereira, D. C., de Lima, M. N. M., de Lima Junior, D., da S. Machado, D. G., & Fortes, L. S. (2020). Comparison of competitive anxiety and self-confidence in Brazilian Jiu-Jitsu skills levels: A cross-sectional in-event study. *Ido Movement for Culture. Journal of Martial Arts Anthropology*, 20(1), 30–39. <https://doi.org/10.14589/ido.20.1.4>.
- Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2015). *Health Behavior: Theory, Research, and Practice*. John Wiley & Sons, Inc.
- Kavanagh, C. M., Jong, J., McKay, R., & Whitehouse, H. (2019). Positive experiences of high arousal martial arts rituals are linked to identity fusion and costly pro-group actions. *European Journal of Social Psychology*, 49(3), 461–481. <https://doi.org/10.1002/ejsp.2514>.
- Kendellen, K., & Camiré, M. (2020). Going beyond the interview: Methodological considerations for “getting at” life skills transfer using a longitudinal integrated qualitative approach. *Qualitative Research in Sport, Exercise and Health*, 12(1), 91–107. <https://doi.org/10.1080/2159676x.2019.1593231>.
- Newman, T. J. (2020). Life skill development and transfer: “They’re not just meant for playing sports”. *Research on Social Work Practice*, 30(6), 643–657. <https://doi.org/10.1177/1049731520903427>.
- Riquelme-Hernández, C. R., Reyes-Barria, J. P., Herrera-Valenzuela, T., Zapata-Lamana, R., Reyes Molina, D. E., & Cigarroa, I. (2022). Profile of the Brazilian Jiu-Jitsu fighter, variables, techniques and instruments for measuring sports performance: A scoping review (Perfil del luchador de Jiu-Jitsu Brasileño, variables, técnicas e instrumentos para medir el rendimiento deportivo: Una). *Retos: Nuevas Perspectivas de Educación Física, Deporte y Recreación*, 45, 351–363.
- Rodrigues, A. I. C., Evans, M. B., & Galatti, L. R. (2019). Social identity and personal connections on the mat: Social network analysis within Brazilian jiu-jitsu. *Psychology of Sport and Exercise*, 40, 127–134. <https://doi.org/10.1016/j.psychsport.2018.10.006>.
- Silva, R. B., Andrade, A., Bevilacqua, G. G., Schlösser, A., Flores Junior, M. A., dos Severino, B. S., & Rodrigues, M. E. S. (2019). Mood states and self-rated health of Brazilian jiu-jitsu fighters in competition. *Revista de Artes Marciais Asiáticas*, 14(2s), 43–46. <https://doi.org/10.18002/rama.v14i2s.5970>.
- Sugden, J. T. (2021). Jiu-jitsu and society: Male mental health on the mats. *Sociology of Sport Journal*, 38(3), 218–230. <https://doi.org/10.1123/ssj.2020-0051>.

- Tarver, T. L., & Levy, J. J. (2023). Brazilian Jiu Jitsu players' motivations to train. *Frontiers in Psychology, 14*, 1–8. <https://doi.org/10.3389/fpsyg.2023.1240351>.
- Weinberger, K., & Burraston, T. (2021). Benefits of Brazilian jiu-jitsu in managing post-traumatic stress disorder: A longitudinal study. *Journal of Community Engagement and Scholarship, 13*(4), 1–9.
- Willing, A. E., Girling, S. A., Deichert, R., Wood-Deichert, R., Gonzalez, J., Hernandez, D., Foran, E., Sanberg, P. R., & Kip, K. E. (2019). Brazilian jiu jitsu training for US service members and veterans with symptoms of PTSD. *Military Medicine, 184*(11–12), e626–e631. <https://doi.org/10.1093/milmed/usz074>.