

# CARING FOR PREGNANT AND POSTPARTUM ATHLETES: ATHLETIC TRAINERS, STRENGTH AND CONDITIONING COACHES, AND SPORT COACHES

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## ABSTRACT

*A survey was created to assess the experience, education, and self-perceived competence of treating and/or training pregnant and postpartum athletes among athletic trainers (AT), strength and conditioning coaches (SCC), and sport coaches (SpC). The survey also asked participants, (n= 1,137) if they had an interest in learning more about treating/training this population and whether or not they were aware of any of the Title IX rights granted to pregnant athletes. The results demonstrated that despite working with females of childbearing age, the vast majority of these professionals have little to no education in how to treat or train pregnant or postpartum athletes (n=967) and few of the professionals expressed a high level of confidence in modifying their sessions for pregnant or postpartum athletes (n=23). The results demonstrate that there is quite a large portion of AT, SCC, and SpC who are not familiar with any rights of pregnant and postpartum athletes, (n=613), despite their responsibility in providing resources and support should an athlete become pregnant or give birth. It does appear however that a majority of the participants feel that pregnancy and postpartum education should be encompassed into their profession (n=909) and that these professionals are willing to learn and possess positive attitudes towards expanding their knowledge in regards to treating and training pregnant and postpartum athletes.*

***Context:** Athletic trainers (AT), strength and conditioning coaches (SCC), and sport coaches (SpC) at the collegiate level form a vital support system for the athletes that they treat and train. When female collegiate athletes become pregnant or return to athletic participation after childbirth, they require exercise modifications to ensure safe prenatal exercise and postpartum recovery. It is unclear if AT, SCC, and SpC are educated in making these adjustments to training and treatment plans.*

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**Objective:** *To assess the education, experience, and level of self-confidence these professionals have in treating/training pregnant and postpartum athletes.*

**Design:** *An online survey was created to assess the experience, education, and self-perceived competence of treating/training pregnant and postpartum athletes among AT, SCC, and SpC. The survey asked participants, (n= 1,137) if they had an interest in learning more about treating/training this population and whether or not they were aware of any of the Title IX rights granted to pregnant athletes.*

**Setting:** *The survey was administered online via mass email recruitment.*

**Participants:** *Only AT, SCC, and SpC working at colleges were invited to complete the survey.*

**Main Outcome Measures:** *Descriptive statistics were analyzed from the survey data.*

**Results:** *Demonstrate that despite working with females of childbearing age, the majority of these professionals have little to no education in how to treat/train pregnant or postpartum athletes (n=967) and few of the professionals expressed a high level of confidence in modifying their sessions (n=23). There is quite a large portion of AT, SCC, and SpC who are unfamiliar with rights of pregnant and postpartum athletes, (n=613).*

**Conclusion:** *AT, SCC, SpC do not have formal education in treating or training pregnant and postpartum athletes despite Title IX requiring that these athletes receive equal treatment and training opportunities as non-pregnant and postpartum athletes.*

## **INTRODUCTION**

Prior to 2008, there was little legislation to protect pregnant women beyond the Family Medical Leave Act (FMLA), and yet, FMLA does not protect students at all as they are not actually employed by the university or college (Larche & McCarthy, 2007). Some female student-athletes have even reported experiencing pressure to choose between continuing their pregnancy and facing losing their sports scholarship, which for some meant their ability to complete their education (Sorenson, Sincoff & Siebeneck, 2009).

Since 2008, many colleges and universities have added to their Title IX policies to protect pregnant student-athletes. Title IX grants the following rights, among several others, to pregnant student-athletes; helping the pregnant or parenting student-athlete plan for his or her continued academic progress; helping the student-athlete return to sport after pregnancy and during parenting, if the student-athlete so desires; allowing a pregnant or parenting student-athlete to fully participate on the team, including all team-related activities; not terminating or reducing a student-athlete's athletics aid because of the student-athlete's pregnancy, marital or parental status during the term of the award; and providing modifications to athletic activities for pregnancy- related conditions (Hogshead Makar & Sorensen, 2008).

The National Collegiate Athletic Association (NCAA) recognizes the importance of staff members of the athletics department at each college or university to be well-versed in its institutions' pregnancy and parenting policy and to provide support for athletes experiencing pregnancy at any point of their athletic career. Athletic trainers are often the first to recognize that a student-athlete is pregnant or the first person approached in confidence within the athletics department and athletic coaches play a pivotal role in helping their

student-athletes deal with pregnancy and parenting (Hogshead Makar & Sorensen, 2008). Strength and conditioning coaches also play a key role in assisting pregnant athletes modify their workouts for pregnancy-related conditions. Such conditions include but are not limited to; gestational diabetes, preeclampsia, diastasis recti, pelvic floor dysfunction, and prolapse.

Together, the athletic trainer, strength and conditioning coach, and the athletic coach form an invaluable support team for the pregnant athlete. Therefore, it is the primary aim of this study to assess the education, experience, and level of self-confidence these professionals have in treating and training pregnant and postpartum athletes.

## **METHODS**

### **Study Participants**

Subjects were recruited through mass email distribution. This was accomplished by first gathering email addresses for all sport coaches (SpC) of female college athletic teams, all college/university athletic trainers (AT), and all strength and conditioning coaches (SCC) at the institutions. Email addresses were retrieved from every college and university in the country for all National Collegiate Athletic Association (NCAA) DI, DII, DIII, National Association of Intercollegiate Athletics (NAIA), and community colleges (CC). Inclusion criteria for subjects included being a university or college AT, SCC, or SpC of at least 18 years of age. A total of 1,137 participants started the survey with 8 being excluded from the study for not being either a college/university AT, SCC, or SpC. This left a total of 1,129 participants who were eligible to complete the survey. Participants included; AT (n=548), SCC (n=201), and SpC (n=380).

### **Study Procedure**

A survey was created to assess the experience, education, and self-perceived competence of treating and/or training pregnant and postpartum athletes among AT, SCC, and SpC. The survey also asked participants if they had an interest in learning more about treating/training this population and whether or not they were aware of any of the Title IX rights granted to pregnant athletes. The survey was approved by the University of Findlay Institutional Review Board and validated prior to dissemination. The survey link was sent to AT, SCC, and SpC via email with informed consent forms attached to the beginning of the survey and inclusion criteria questions were gathered before participants could continue with the rest of the survey. A total of 1,129 participants met the inclusion criteria and were able to complete the rest of the survey with all participants being asked the same questions as outlined.

## **RESULTS**

The survey yielded a 100% completion rate with a total of 1,129 participants responding to all 7 questions. The first question, "Have you ever received any formal education or training for working with prenatal or postpartum athletes? This could include classes, workshops, or lectures," showed that 17.3% (n=95) of AT answered yes and 82.7% (n=453) answered no, 21.4% (n=43) of

SCC answered yes and 78.6% (n=158) answered no, and 6.3% (n=24) of SpC answered yes and 93.7% (n=356) answered no.

When asked, “How knowledgeable are you in modifying rehabilitation or training sessions for pregnant or postpartum athletes?” 38.7% (n=212) of AT answered not knowledgeable, 41.6% (n=228) answered somewhat knowledgeable, 10.4% (n=57) answered neutral, 8.2% (n=45) answered knowledgeable, and 1.1% (n=6) answered very knowledgeable. When SCC were asked this question, 24.9% (n=50) answered not knowledgeable, 37.3% answered somewhat knowledgeable, 15.9% (n=32) answered neutral, 16.9% (n=34) answered knowledgeable, and 5% (n=10) answered very knowledgeable. Finally, when SpC were asked the same question, 51.1% (n=194) answered not knowledgeable, 30.3% (n=115) answered somewhat knowledgeable, 9.5% (n=36) answered neutral, 7.4% (n=28) answered knowledgeable, and 1.8% (n=7) answered very knowledgeable.

Next, all participants were asked, “Has a student-athlete ever disclosed to you that they were pregnant or had been pregnant during their collegiate athletic career?” 39.8% (n=218) of AT answered yes and 60.2% (n=330) answered no. When asked the same question, 25.9% (n=52) of SCC answered yes, and 74.1% (n=149) answered no. SpC reported that 37.9% (n=144) had an athlete disclose that they were pregnant or had been pregnant during their collegiate athletic career and 62.1% (n=284) had not.

All of the participants were asked, “Have you ever cared for or trained a pregnant or postpartum athlete (to your knowledge?)” 30.2% (n=165) of AT answered yes and 69.9% (n=383) answered no. 27.9% (n=56) of SCC answered yes and 72.1% (n=145) answered no. 25.3% (n=96) of SpC answered yes to the same question and 74.7% (n=284) answered no.

The next question, “Do you feel pregnancy and postpartum education and training should be encompassed into your profession?” was asked to all of the participants. 89.2% (n=489) AT answered yes and 10.8% (n=59) answered no. 77.6% (n=156) of SCC answered yes and 22.4% (n=45) answered no and 69.5% (n=264) of SpC answered yes and 30.5% (n=116) answered no.

When asked, “How interested would you be in receiving education or training related to caring for or training pregnant or postpartum athletes?” 7.7% (n=42) of AT answered very uninterested, 9.3% (n=51) answered somewhat uninterested, 15.7% (n=86) answered neutral, 42.9% (n=235) answered somewhat interested, and 24.5% (n=134) answered very interested. When asked the same question, SCC answered, 10.4% (n=21) answered very uninterested, 12.9% (n=26) answered somewhat uninterested, 21.9% (n=44) answered neutral, 33.3% (n=67) answered somewhat interested, and 21.4% (n=43) answered very interested. SpC answered the same question with the following results; 11.1% (n=42) answered very uninterested, 16.3% (n=62) answered somewhat uninterested, 24.5% (n=93) answered neutral, 34.5% (n=131) answered somewhat interested, and 13.7% (n=52) answered very interested.

Finally, when asked, “Are you aware of the rights of pregnant students-athletes provided under Title IX?” AT answered 50.9% (n=279) yes and 49.1% (n=269) no. SCC answered 42.3% (n=85) yes and 57.7% (n=116) no. SpC answered 40% (n=152) yes and 60% (n=228) no.

### **DISCUSSION**

The purpose of this study was to assess the education, experience, and level of self-confidence AT, SCC, and SpC have in treating and training pregnant and postpartum athletes. The first step in this analysis was to ascertain the education that these professionals have in treating or training pregnant and postpartum athletes. The results demonstrated that despite working with females of childbearing age, the vast majority of these professionals have little to no education in how to treat or train a pregnant or postpartum athlete. 78.6% of SCC, 82.7% of AT, and 93.7% of SpC reported having no formal education in treating or training pregnant or postpartum athletes.

Having proper education in treating, rehabilitating, and coaching pregnant and postpartum athletes is crucial because there is a myriad of benefits to prenatal and postpartum exercise, as well as general medical conditions, physiological changes, and injuries specific to pregnant and postpartum women that their professionals should be aware of. Exercise during pregnancy has been shown to increase the incidence of vaginal delivery as well as lower the incidence of cesarean delivery, excessive gestational weight gain, gestational diabetes, gestational hypertensive disorders, preterm birth, and lower birth weight (Santo, Forbes, Oken & Belfort, 2017; Selman, 2022; Menke; 2022; Prewitt-White, 2018; Budler & Budler, 2022; Sanbria Martinez, 2015). Additionally, prenatal exercise has a positive impact on healthy growth and improved cognition and intelligence of the baby after birth (Menke, 2022).

Two common prenatal medical conditions that can impact a pregnant woman’s ability to continue safe exercise are gestational diabetes and preeclampsia. These conditions can develop during pregnancy and should be carefully monitored especially with physical activity (Yaping, 2020; Keating, 2022; Eiland, 2012). Other conditions that are common in pregnant and postpartum women are urinary incontinence, pelvic organ prolapse, and diastasis recti or abdominal separation. All three of these conditions can be exacerbated by inappropriate exercise prescription, incorrect or altered biomechanics due to the physiological changes, and mismanagement of intra-abdominal pressure during strenuous movements (Michalska, 2018; Selman, 2022; Gould, 2021). These conditions can be minimized and appropriately managed with proper exercise prescription, posture correction, and appropriate referral to other health care professionals. It is imperative that AT, SCC, and SpC have foundational knowledge of these conditions and recognize when to refer these athletes to the appropriate healthcare professionals.

These professionals were asked if an athlete had ever disclosed that they were pregnant while participating as a member of the team in addition to whether or not they had treated or trained a pregnant or postpartum athlete before.

39.8% of AT, 37.9% of SpC and 25.9% of SCC report that an athlete had disclosed a pregnancy. These numbers demonstrate that it is not uncommon for athletes to report pregnancies to their university athletic and athletic training staff. Additionally, 30.2% of AT, 27.9% of SCC and 25.3% of SpC report having treated or trained a pregnant or postpartum athlete. It should be noted that this number could be higher as athletes may not have disclosed the pregnancy and continued training or treatment without these professionals' knowledge.

Further, to assess the self-confidence these professions have in treating or training pregnant and postpartum athletes, they were asked how knowledgeable they are in modifying treatment or training sessions. The results demonstrate that none of the professions expressed a high level of confidence in modifying their sessions for pregnant or postpartum athletes, with only 8.2% (n=45) of AT, 16.9% (n=34) of SCC, and 7.4% (n=28) of SpC reporting knowledgeable, and 1.1% (n=6) of AT, 5% (n=10) of SCC, and 1.8% (n=7) of SpC reporting very knowledgeable. With this self-reported low level of confidence in making pregnancy-specific and postpartum-specific modifications to treatment and training sessions, there is a strongly-implied need for the integration of this content into education.

As previously mentioned, it is essential to have treatment and training modified properly to ensure the health of the athlete and preserve the health of the pregnancy as well. Unfortunately, there appears to be a knowledge gap that is contributing to a low level of self confidence in these university professionals when working with pregnant and postpartum athletes. It does appear however that a majority of the participants feel that pregnancy and postpartum education should be encompassed into their profession: 89.2% (n=489) of AT, 77.6% (n=156) of SCC, and 69.5% (n=264) of SpC. While the answers varied, only small percentages of the participants in each profession stated that they would be very uninterested in receiving education or training related to caring for or training pregnant or postpartum athletes. Overall, this shows that these professionals are willing to learn and possess positive attitudes towards expanding their knowledge in regards to treating and training pregnant and postpartum athletes.

The last question of the survey was intended to gather insight into the specific knowledge all of the participants had in regards to the rights afforded to pregnant and postpartum athletes. Some rights of pregnant and postpartum athletes that are relevant to AT, SCC, and SpC include but are not limited to; the athlete's right to their financial aid and scholarships regardless of the physical condition they report in, the athlete's right to participate in sports (with medical clearance from her obstetrician) and team functions, and the athlete's right to the same medical assistance and rehabilitation services provided to other athletes. According to the results of this survey, with 49.1% (n=269) of AT, 57.7% (n=116) of SCC, and 60% (n=228) of SpC reporting being unaware of the rights afforded to pregnant and postpartum athletes under Title IX, despite it being their responsibility to provide resources and support should an athlete become pregnant or give birth.



## FUTURE RESEARCH

The results of this study demonstrate that there is a large gap in knowledge of collegiate professionals who have the potential to interact with, treat, rehabilitate, and train pregnant and postpartum athletes. Future research is needed to determine if education in treating and training can be implemented into the curriculum and continuing education of athletic trainers, strength coaches, and athletic coaches. Future research should also be directed toward the accessibility and dispersion of Title IX information to these professionals to help them better understand the rights of pregnant and postpartum athletes.

## LIMITATIONS

A limitation of this study is that the subjects were recruited through email with email addresses collected from each university's website. There were several emails that could not be delivered due to incorrect email addresses listed on the website, staff changes, or no email addresses listed at all. Due to this, many SpC, AT, and SCC may not have been able to participate. Despite this, a large number of subjects participated and a 100% completion rate of those that started the survey was recorded.

## CONCLUSION

This study demonstrates the continued need to educate collegiate athletic trainers, strength and conditioning coaches, and sport coaches in treating and training pregnant and postpartum athletes. Title IX rights of pregnant and postpartum also need to be discussed and reviewed to ensure all of these professionals understand how to best support these athletes.

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