

The University of Akron

IdeaExchange@UAkron

---

Williams Honors College, Honors Research  
Projects

The Dr. Gary B. and Pamela S. Williams Honors  
College

---

Spring 2022

## Perceptions of Strength Training for Dancers at a Midwestern University

Abigail Boenig-Dombek  
ajb308@uakron.edu

Follow this and additional works at: [https://ideaexchange.uakron.edu/honors\\_research\\_projects](https://ideaexchange.uakron.edu/honors_research_projects)



Part of the [Dance Commons](#), [Fine Arts Commons](#), and the [Sports Sciences Commons](#)

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

---

### Recommended Citation

Boenig-Dombek, Abigail, "Perceptions of Strength Training for Dancers at a Midwestern University" (2022). *Williams Honors College, Honors Research Projects*. 1588.

[https://ideaexchange.uakron.edu/honors\\_research\\_projects/1588](https://ideaexchange.uakron.edu/honors_research_projects/1588)

This Dissertation/Thesis is brought to you for free and open access by The Dr. Gary B. and Pamela S. Williams Honors College at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Williams Honors College, Honors Research Projects by an authorized administrator of IdeaExchange@UAkron. For more information, please contact [mjon@uakron.edu](mailto:mjon@uakron.edu), [uapress@uakron.edu](mailto:uapress@uakron.edu).

# **Perceptions of Strength Training for Dancers at a Midwestern University**

Abigail Boenig-Dombek

Honors Research Project

Advisor: Melissa Smith

The University of Akron

**TABLE OF CONTENTS**

Abstract	3
Introduction	4
Literature Review	5
Methods	11
Results	12
Discussion	20
Works Cited	26
Appendix A	28
Appendix B	29

### **Abstract**

The purpose of the research is to gain a deeper insight into the perceptions of strength training within the dance community. The research aimed to receive feedback from individuals over the age of 18 who are currently studying, practicing, or teaching dance. **METHODS:** The survey utilized was replicated among a convenience sample of adult dancers associated with The University of Akron's dance program from the research of Farmer and Brouner (2021) in their scholarly article, "Perceptions of Strength Training in Dance." The survey contained 14 questions requiring the individual to assess their personal involvement in strength training. The questions were then followed by 21 statements the individual was expected to react to utilizing the Likert scale response of 1-5. The number 1 was equivalent to strongly disagreeing while the number 5 was equivalent to strongly agreeing. The survey was modified by the researchers, Farmer and Brouner (2021), to reflect the dance genres under investigation by replacing wording such as sports training with dance training and athlete with dancer. At the end of the survey, a free-text comment box was included to offer individuals the opportunity to provide further information about strength training if they chose to participate. **RESULTS:** The results of the research concluded that most individuals practicing and studying dance within higher education at a midwestern university perceive strength training to be an important and beneficial aspect of their training. **DISCUSSION:** The implications of this study showcased that most of the dancers at The University of Akron place an emphasis on strength training in their own personal practice. The pre-professional dancers understand the relevance and importance strength training can play in their dance training and practice.

*Keywords:* strength training, dancers, higher education

## **Introduction**

In my honors project, I studied the perceptions of strength training for dancers at The University of Akron. My personal motivation for completing this research is due to my own experiences with growing up as a dancer and the ideas that were originally presented to me. Growing up in a ballet focused studio, it was impressed upon me that everything I do within an hour and a half ballet class should be sufficient without any other training. There were minimal suggestions for working on core exercises, and activities such as running were highly frowned upon. For example, there are fears that running may cause the calves or lower portion of the body to tighten and cause a strain on a dancer's potential flexibility. Weightlifting can also be seen as a way of bulking up the muscles and potentially creating too much muscle for the technique. Through double majoring in dance and exercise science at The University of Akron, I have been able to learn about dance in a more mechanical manner. As my knowledge of the body increased, I was able to have a better understanding of ways I could strengthen my body, defend my reasoning, and protect myself from future injuries. There is a new era beginning within the dance community that is promoting the need to cross train to be a healthy and successful dancer and performer. I predicted that due to this there would be a potential split in the results related to the value of strength training as perceptions within the dance community are continuing to shift. The question this study aimed to investigate was: Do individuals who are part of the dance community have negative opinions on strength training? A secondary question was how one's perception of strength training is impacted by their level of current dance practice.

## Literature Review

### Dancers as Artistic Athletes

Dance is widely regarded as a highly athletic activity and requires a wide range of abilities from an individual. Dance is an extremely unique physical activity as it is also widely regarded as an art form. The question for years has been whether dance is more qualified as an art form or an athletic activity. The word athlete is defined as, “a person who is trained or skilled in exercises, sports, or games requiring physical strength, agility, or stamina” (Merriam-Webster, 2022). The stylistic quality of dance requires the individual to possess not only artistic qualities, but also an extreme range of strength and flexibility. The discussion of dance as an art form or an athletic activity has been extremely controversial in the past and continues to be a debated topic. The discussion often can be centered around defining what styles are more viewed as athletic than others. Dance throughout history has been rooted in cultural and ceremonial events throughout the world. The performance or ritualistic quality that can be viewed from these forms of dance are more viewed as an art form rather due to its intentions not requiring physical improvements in strength, agility, or stamina. Sukhatankar (2015) stated following an analysis of the conventional classifications of art-forms, “Dance is an art-form. The gradual process by which various dance-forms get created and developed includes various social, cultural, political, and historical factors.” The 21<sup>st</sup> century has created a debate due to the advances in what is taught to dancers today. The expectations for dancers have risen from just completing movement to needing to complete it well. An individual may be able to move his/her body in extremely impressive ways including jumps, turns and extensions. These movements alone can be viewed as extremely athletic and can be defined as motions required in many athletic sports. The quality of emotion and artistic expression seen in dance is what helps take these motions from just

## Perceptions of Strength Training for Dancers at a Midwestern University

movement to an artistic expression of the body. As stated by Guarino (2015), “When dancers use their bodies in physically impressive and athletic ways, they must also possess creative intention, a sense of self, and a desire for originality for them to be considered artists. Athletes might demonstrate similar qualities while playing sport, but their work is only publicly revered where there is obvious skill and measurable success.”

To create many of the shapes and movements choreographed, an individual needs to be flexible enough to move into the positions and strong enough to hold them. It has been argued that cross training in aspects such as strength training with weights or running to increase cardiorespiratory endurance is not beneficial for dancers or can be harmful. As stated by Stracciolini et al., (2016) “Resistance training often is not an inherent component of current dance training for pediatric female dancers. Reasons for this include concerns surrounding injury to the immature skeleton and diminishing dancer aesthetic appearance, as well as questions related to the effectiveness of such training for increasing dancer strength and muscle endurance.” In many other athletic activities, it is expected for participants to cross train outside of their practices or have specified times where teams strength train together. Dance classes are often mostly focused on technique and skills rather than focusing on having the strength to complete those skills. Whereas other coaches hold the expectation that the athlete will complete a workout with the team in a weight room or compete training exercises that will support their performance in their respective sport, a dance practice or rehearsal is more focused on the development of the technique rather than improving the specific athletic abilities of an individual. In comparison to athletes, studies have revealed that dancers may not be as adequately fit as what may be required of them physically (Brown et al., 2007). This can also raise the concern of dancers potentially being more prone to injuries due to their lack of strength

needed to complete the movement expected of them. Much of the new movement and choreography created today comes from a variety of styles and techniques. The world of competition and commercial dance have increased the expectation for what a dancer's body should be capable of performing. As stated by Harrington (2020), "The [dance] vocabulary comes out of a combination of gymnastics (including rhythmic), jazz, hip hop, modern, and ballet." The rise in expectations has occurred due to individuals continuously pushing their bodies to achieve the aesthetically pleasing movement for the audience (Harrington, 2020).

### **Dancer's Body Image**

Body image research has quite often been seen to focus on the impact it has on dancers, or professional ballet dancers specifically. The history of ballet specifically has held the idea that dancers need to have a specific appearance and ideal to their bodies. As stated by Holland (2017), "This ideal of a featherlike, angelic dancer was established at the beginning of ballet when the high and noble men and women of the courts used to dance. The prestige and high social class ideology is one that is still present within ballet." The presence and aesthetic expected throughout history for ballet dancers specifically has played a role in how they train and treat their bodies. There is a correlation between dancers suffering from disordered eating and negative body image due to the amount of pressure placed on needing a specific body shape. For example, the well-known ballet master George Balanchine preferred dancers whose bodies were straight and narrow with long limbs (Pollatou et al., 2010). Even though in the past few year's viewpoints have improved and changed towards strengthening, there are many companies and pre-professionals that deem their worthiness on the reflection in the mirror.

Many of the young performers begin between the ages of 2-4, so the demand for perfectionism and unhealthy habits has been ingrained within their minds and bodies. As stated

## Perceptions of Strength Training for Dancers at a Midwestern University

by Clippinger (2016), “Athletes engaged in sports that encourage thinness for appearance or performance such as dancers, and particularly ballet dancers, are at a higher risk for developing eating disorders and the female athlete triad.” The female athlete triad describes the combination of disordered eating, menstrual dysfunction, and the potential for premature osteoporosis (Clippinger, 2016). In a study of the female athlete triad components in a college dance company, it was found that overall, 73% of dancers were at risk for the Triad. It was also found that 88.5% of the dancers displayed eating disorder risks (Burrus et al., 2018). A dancer’s high expectations of presentation can continue to lead to these types of destructive practices. Even though an individual may think they are taking effective courses of action to better improve their ability to dance, they are in turn forcing their bodies to work on little to no energy. By not supplying their bodies with the rest and nutrition required they are creating the potential for more injuries (Pollatou et al., 2010).

### **Overtraining and Injuries in Dancers**

The prevalence of dancers practicing and performing with injuries is extremely high. In a study completed within a professional contemporary company, it was found that two-thirds of the participants danced with pain during the 7-week period during the study. Of the 21 participants, there were also 251 overuse injury symptoms reported within the study (Boeding et. al, 2019). Dancers quite often have long hours of training that can include a warm-up, technique class, and rehearsals. A dancer’s rehearsals typically involve completing the same movement repeatedly in order to achieve the vision by the artist. This has the potential to lead to overuse injuries (Boeding et. al, 2019). One of the most common athletic injuries experienced are ankle sprains. Due to the responsibility of the ankle to create functional movement in the lower extremities, the risk for injury is much higher. Dancers are often required to bear their full weight

## Perceptions of Strength Training for Dancers at a Midwestern University

on one leg with the ankle in full plantar flexion when performing many common movements, especially ballet dancers. This places a lot more stress on the ankle than what is expected in activities of daily living. The injury risk is increased due to the extreme motions completed in full plantar flexion, an already unstable position. In a study completed specific to dancers, it was found that individuals with compromised functional ankle stability had compromised sensorimotor control. This was found to be in relationship to the individuals experiencing recurrent ankle injuries. In the study a survey was also completed to understand the prevalence of these injuries in advanced dancers. The study stated, “Simon et al. surveyed students with a modern or ballet university dance major and found 53.2% of them has experienced chronic ankle instability, which can lead to long-term pathologies and balance deficits” (You-jou Hung et al., 2021). The recurrent injuries or chronic issues are evidence of individuals continuing to remain in the same patterns of activity that continue to impact their movement quality.

### **The Power of Social Influence**

Social media and consumerism may influence the way young individuals train or fuel their bodies. Even though there should be encouragement to positively strength train and better oneself as an individual, quite often there is a lack of knowledge or a disconnect that can play a role in the way a dancer trains or is trained. As stated by Harrington (2020), “The dance consumer model is producing a specific body...hyper-flexible, thin but strong enough to meet the high technical demands of propelling the body through gymnastic contortions.” Dance in higher education is also impacted by students who have experienced training and competing in the dance consumer model environments. There is a reasonable difference in training environments for dancers who attend to a studio to only train and perform versus to train, perform, and compete. The popularity of dance competitions has increased the prevalence of

## Perceptions of Strength Training for Dancers at a Midwestern University

dance becoming a competitive activity rather than dancers going on stage purely to put on a show for an audience. Harrington (2020) stated, “Social understanding, critical thinking, embodied learning, or growth mentally are not valued (in competition dance) ...Dance is being taught to produce a number-one finish since this will bring in new dance customers who want to be a winner and famous”. The value of placing emphasis on the importance of the aforementioned aspects of training can potentially be lost due to the focus on winning. The addition of competition and the striving to win can take away from the original framework of what dance held before this added element.

The strength, power, and flexibility of a dancer is crucial to their overall performance and execution of the movement. Even though these are commonly expected, studies of the effects on strength training in dancers is rarely completed (DiPasquale & Wood, 2017). Dance can more commonly be viewed as an art form rather than an athletic sport due to its creative nature, but an individual must have the proper training and strength for the shapes and movements to be executed. The prevalence of strength training is an important topic to be discussed with individuals training in dance due to the extreme nature of the activity, but this leaves the training up to the discretion of the teachers or the dancer. The perceptions of strength training have the potential to vary due to the differing opinions and knowledge of individuals teaching or performing dance. However, with the increase in expectations it can be inferred that other outlets for improvement may be utilized or sought after.

## Methods

The study used a convenience sample method of individuals over the age of 18 who are currently studying or practicing dance. The electronic survey was distributed to dancers at The University of Akron actively participating in weekly training, practices, or rehearsals between April 12<sup>th</sup> and April 15<sup>th</sup>.

The survey utilized was a modified version of the Training Information Survey (TIS) that was copied by the researcher into Microsoft Forms (Microsoft Corporation, Redmond, WA) so it could be distributed electronically. The survey was utilized in the research of Farmer and Brouner (2021) in their scholarly article, “Perceptions of Strength Training in Dance.” The survey contained 14 questions requiring the individual to assess their personal involvement in strength training. The questions were then followed by 21 statements the individual was expected to react to utilizing the Likert scale response of 1-5. The number 1 was equivalent to strongly disagreeing while the number 5 was equivalent to strongly agreeing. The survey was modified by the researchers, Farmer and Brouner (2021), to reflect the dance genres under investigation by replacing wording such as “sports training” with “dance training” and “athlete” with “dancer.” At the end of the survey, a free-text comment box was included to offer individuals the opportunity to provide further information about strength training if they chose to participate. A copy of the survey is found in Appendix B.

The study was approved by The University of Akron’s Institutional Review Board. The participants received an electronic self-report survey to collect information. All participants were contacted after receiving permission from professors at The University of Akron Dance Department to send these individuals emails containing the survey. The email contained a consent statement that was located before the electronic survey. The individual was required to

## Perceptions of Strength Training for Dancers at a Midwestern University

acknowledge their understanding of the information on the consent form before accessing the survey. A copy of the consent form is included in Appendix A. The data collected was anonymous and did not include any form of self-identifying information.

Once collected, data was analyzed for consistent trends among answers by utilizing descriptive statistics.

### **Results**

A total of 41 responses were recorded for this study. One response was eliminated due to confusion by participant related to a language barrier. The remaining forty responses were analyzed utilizing descriptive statistics to understand the perceptions of the dancers about strength training.

The first question asked the participant, “How many days each week do you typically dance during performance season/ term time?” Fifty-five percent of the respondents answered five to six days per week and another thirty-five percent of respondents answered three to four days per week. The second question asked the participant “How many days each week do you typically dance during off season/ holiday?” Forty percent of the respondents answered with one to two days per week while another twenty-five percent answered with three to four days per week. Fifteen percent of respondents responded with zero days per week were spent practicing on the off season. The third question asked the participant, “If UA does not have class/rehearsal/ performance every day, do you still dance on your own on the spare days?” Twenty-nine respondents answered “yes,” ten respondents answered “no,” and 1 respondent answered, “not applicable.” The fourth question asked the participant, “Do you get one day of rest (no exercise

## Perceptions of Strength Training for Dancers at a Midwestern University

at all) each week?” Eighty percent of the participants answered “yes,” and twenty percent answered “no.” Data for question #4 is represented in Figure 1.

### Figure 1

*Distribution of responses regarding one day of rest each week*

Do you get one day of rest (no exercise at all) each week?



The fifth question asked the participant, “When UA does not have dance practice together every day, are you required to carry out your own dance practice on your own?” Sixty-eight percent of the respondents answered “no,” thirty percent answered “yes,” and three percent answered “not applicable.” The sixth question asked the participant, “Is strength training required as part of your overall dance training programme/contract?” Fifty-eight percent of the respondents responded with “no” and forty-three percent answered with “yes.” The data for question #6 is represented in Figure 2.

### Figure 2

*Distribution of responses for if strength training is a required part of the dancer’s overall dance training program*

Is strength training required as part of your overall dance training programme/contract?



## Perceptions of Strength Training for Dancers at a Midwestern University

The seventh question asked the participant, “If you are required to practice dancing on your own, are you expected to strength train on your own?” Fifty percent of the participants answered with “yes,” twenty-five percent answered with “no,” and twenty-five percent answered with “not applicable.” The eighth question asked the participant, “If you are required to practice dancing on your own, are you expected to practice your specific dance genre on your own?” Forty-five percent of respondents answered “yes,” thirty-five percent answered “no,” and twenty percent answered, “not applicable.” The ninth question asked, “If strength training is not required as a part of your overall dance training/ contract, do you strength train on your own anyways?” Seventy-five percent of the respondents answered “yes,” fifteen percent of the respondents answered “no,” and ten percent of the respondents answered, “not applicable.” The distribution of responses for questions 7, 8, and 9 are displayed in Table 1.

**Table 1**

*Distribution of responses for questions 7, 8, and 9*

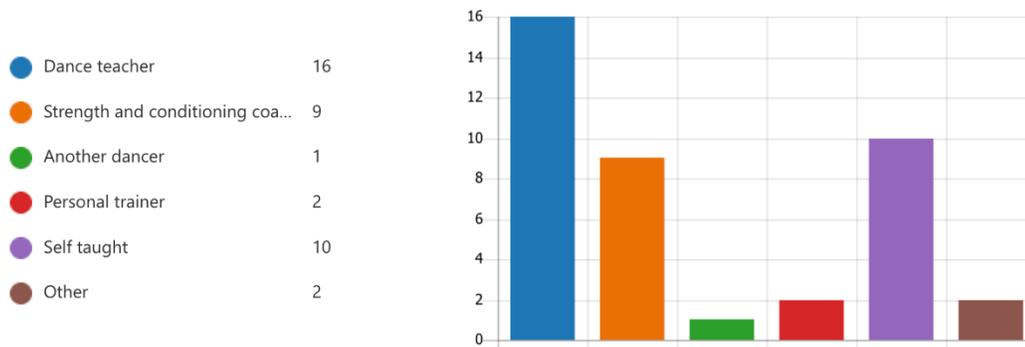
	Yes	No	Not Applicable
7. If you are required to practice dancing on your own, are you expected to strength train on your own?	20 (50%)	10 (25%)	10 (25%)
8. If you are required to practice dancing on your own, are you expected to practice your specific dance genre on your own?	18 (45%)	14 (35%)	8 (20%)
9. If strength training is not required as a part of your overall dance training/ contract, do you strength train on your own anyways?	30 (75%)	6 (15%)	4 (10%)

## Perceptions of Strength Training for Dancers at a Midwestern University

The tenth question stated, “Typically how many days per week do you strength train?” Forty-two percent of the respondents answered that they train 1-2 days per week while another 40% responded with 3-4 days per week. The eleventh question said, “How long is a typical strength training session (mins)? (If your training differs please enter the average length)”. Forty-eight percent of the respondents answered that they train for about 60 to 90 minutes and another 45% answered that they train for about 30-60 minutes. The twelfth question stated, “How long do you typically dance each day (excluding any strength training) (mins)?” Forty-eight percent of the respondents answered 3 hours or less and another 25% of the respondents answered 4 to 5 hours. Twenty-three percent of the respondents answered that 6 or more hours per day are focused on dancing. The thirteenth question asked, “Who taught you strength training techniques?” Forty percent of the respondents were taught techniques by their dance teacher. Twenty-five percent reported being self-taught, and another 22.5% were taught by a strength and conditioning coach. The distribution of who taught the dancer strength training techniques is shown in Figure 3.

**Figure 3**

*Distribution of responses for who taught the dancer strength training techniques*



## Perceptions of Strength Training for Dancers at a Midwestern University

The fourteenth question contained seventeen statements the participant could react to with 1 being equivalent to “strongly disagree” and 5 being equivalent to “strongly agree.” The question stated, “For each of the following statements, please select the number corresponding to the following scale that best describes your opinion: Do not spend too much time on any statement, and answer how you feel about each statement. (1=Strongly Disagree, 2= Disagree, 3= No Opinion, 4= Agree, 5=Strongly Disagree).” Statement 1 said, “ST is essential to my overall development as a dancer.” Most dancers, 52.5%, responded with “strongly agree” while another 45% responded with “agree,” and 2.5% had “no opinion.” Statement 2 stated, “Women should participate in ST.” All respondents agreed with 62.5% answering “strongly agree” and 37.5% answering “agree.” Statement 3 said, “Men should participate in ST.” All respondents agreed with 60% of the respondents answering, “strongly agree” and 40% answering “agree.” Statement 4 stated, “ST should be part of every training program regardless of dance style.” Nearly half, 47.5%, of the respondents answered, “strongly agree,” another 47.5% answered “agree,” and 5% answered “no opinion.” Statement 5 said, “ST is beneficial to men,” and statement 6 said, “ST is beneficial to women.” All respondents agreed with both statements with 62.5% of participants answering, “strongly agree” and 37.5% of participants answering “agree” for both statements. Statement 7 stated, “ST has beneficial effects on my dance performance.” All respondents agreed with this statement as 65% of participants answered, “strongly agree” and 35% answered “agree.” Statement 8 said, “My ST techniques are adequate so that I can avoid injury from ST.” Forty percent of the respondents answered, “strongly agree,” another 42.5% answered “agree,” 12.5% of respondents answered, “no opinion,” and 5% answered “disagree.” Statement 9 stated, “My ST techniques are adequate to help me improve my performance.” Fifty percent of the respondents answered, “strongly agree,” another 37.5% answered “agree,” 7.5%

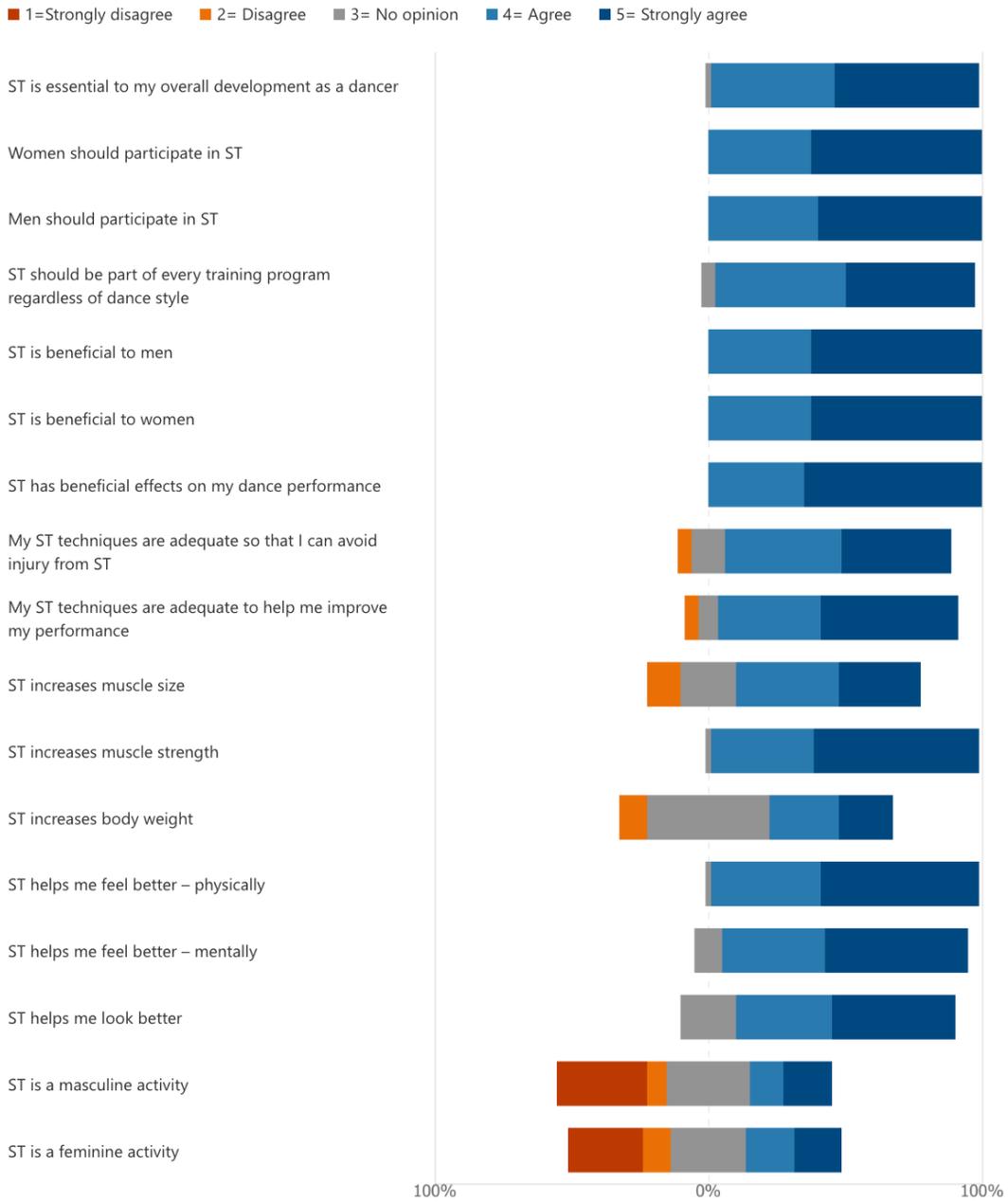
## Perceptions of Strength Training for Dancers at a Midwestern University

answered “no opinion,” and 5% answered “disagree.” Statement 10 said, “ST increases muscle size.” Thirty percent of the respondents answered, “strongly agree,” another 37.5% answered “agree,” 20% of the respondents answered, “no opinion,” and 12.5% stated “disagree.” Statement 11 stated, “ST increases muscle strength.” Sixty percent of respondents answered, “strongly agree,” another 37.5% answered “agree,” and 2.5% answered “no opinion.” Statement 12 said, “ST increases body weight.” Forty-five percent of respondents answered, “no opinion,” another 25% of respondents answered “agree,” 20% of respondents answered “agree,” and 10% of respondents answered “disagree.” Statement 13 stated, “ST helps me feel better- physically.” Most respondents agreed with this statement as 57.5% of respondents answered, “strongly agree,” another 40% of respondents answered “agree,” while only 2.5% of respondents had no opinion. Statement 14 said, “ST helps me feel better- mentally.” A majority, 52.5%, of respondents answered, “strongly agree,” another 37.5% of respondents answered “agree,” and 10% of respondents answered, “no opinion.” Statement 15 stated, “ST helps me look better.” Forty-five percent of respondents answered, “strongly agree,” another 35% of respondents answered “agree,” and 20% of respondents answered, “no opinion.” Statement 16 said, “ST is a masculine activity.” Those statistics were split as 32.5% of respondents answered, “strongly disagree,” another 17.5% “strongly agree”, 12.5% answered “agree”, 7.5% answered “disagree”, and 30% answered “no opinion”. Statement 17 stated, “ST is a feminine activity.” The statistics were also split on the answering of this statement as 27.5% of respondents answered, “strongly disagree” and 17.5% of respondents answered both “strongly agree” and “agree.” Another 10% answered “disagree” and 27.5% answered “no opinion.” Figure 4 represents the distribution of responses for statements 1-17 within question fourteen.

# Perceptions of Strength Training for Dancers at a Midwestern University

**Figure 4**

*Distribution of responses analyzing the opinions and perceptions of the dancers on strength training*

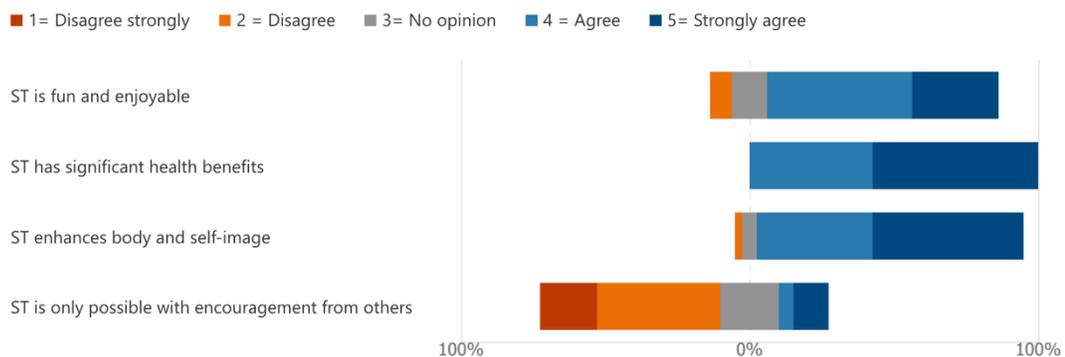


## Perceptions of Strength Training for Dancers at a Midwestern University

The fifteenth question contained four statements the participant could react to with 1 being equivalent to “strongly disagree” and 5 being equivalent to “strongly agree”. The question stated, “For each of the following statements, please select the number corresponding to the following scale that best describes your opinion: Do not spend too much time on any statement and answer how you feel about each statement. (1=Strongly Disagree, 2= Disagree, 3= No Opinion, 4= Agree, 5=Strongly Disagree)”. Statement 1 said, “ST is fun and enjoyable.” Fifty percent of respondents answered “agree,” another 30% answered “strongly agree,” 12.5% answered “no opinion,” and 7.5% answered “disagree.” Statement 2 stated, “ST has significant health benefits.” All respondents answered they agreed with 57.5% answering with “strongly agree” and 42.5% answering with “agree.” Statement 3 said, “ST enhances body and self-image.” Most respondents agreed with 52.5% answering “strongly agree” and 40% answering “agree.” Another 5% answered “no opinion” and 2.5% answered “disagree.” Statement 4 stated, “ST is only possible with encouragement from others.” Forty-two and a half percent of the respondents answered “disagree,” another 20% answered “strongly disagree,” 20% of respondents answered, “no opinion,” 12.5% answered “strongly agree,” and 5% answered “agree.” A summary of data for question 15 is summarized in Figure 5.

**Figure 5**

*Distribution of responses analyzing the opinions and perceptions of the dancers on strength training*



## Perceptions of Strength Training for Dancers at a Midwestern University

The sixteenth question was an open response option for respondents stating, “Any other comments you wish to add relating to strength training?” Fourteen of the forty respondents answered with their opinions on strength training. One individual stated, “Strength training is a part of my training as a dancer and has been beneficial for me but I don’t think it is something that every dancer needs to succeed. Also, ST is not just for men or just for women, anyone can benefit from ST.” Another respondent stated, “I wish I could add more strength training into my schedule but I simply do not have time.” A third respondent said, “Strength training makes me feel better overall and helps me feel stronger in many aspects of dance.”

### **Discussion**

Through the analysis of the data collected from 40 dancers, there were specific trends made clear through the descriptive statistics. The evaluation of the data revealed that many of the dancers studying or practicing dance within The University of Akron hold similar opinions on the relevance and importance of strength training. When reviewing the responses to the open response questions 1 and 2, I was not surprised by most of the respondent’s answers. A normal schedule for most dancers at the university consists of dancing 5-6 or 3-4 days per week depending on level. I also thought the data for question 2 was consistent with the tendencies of our program and what is suggested for the off season in our program. The off season can be utilized as a time to rest and allow the body to recuperate from the high volume of activity that is being completed during the school year. A statistic that I found intriguing was that 73% of respondents answered in question 3 that on off days from dancing with The University of Akron that they would continue to hold their own dance practices. At the university students can reserve or access the studios at almost any point in the day. Having this available to utilize can be

## Perceptions of Strength Training for Dancers at a Midwestern University

beneficial for these types of independent practices that seem important to the dancers. Question 5 emphasized the self-motivation these dancers have as 68% of the respondents answered that if UA does not have dance practice together, they are not required to carry out their own dance practice. The utilization of their spare days to continue their dance practices shows the emphasis of the dancers desiring to get better and use their time effectively. However, most dancers adhere to principles of rest & recovery, with 80% of the respondents reporting on question 4 that they are able to have one full day of rest from exercise each week.

The University of Akron does not hold specific strength training programs for their dancers; rather, the decision is up to the dancer if they would like to participate in strength training or not. Question 6 revealed that 58% of respondents stated that strength training was not required as a part of their overall dance training program. This could lead to the idea that some of the individuals may view the class warm-up, training, or other aspect of their required practice as strength training. Seventy-five percent of respondents for question 9 answered that even though strength training was not a required aspect of their overall dance training, they still chose to strength train on their own. A definition of what strength training meant specifically was not provided, so this could have impacted the data and what people view as strength training. Some may view strength training as lifting weights or going to the gym while others may view strength training as TheraBand and ankle exercises before class. Both are effective in supporting the physical health of a dancer, but there can be varying intensities between the two. Question 10 revealed that most individuals focus on strength training either 1-2 days or 3-4 days per week. This may depend on how many days per week the individual is dancing or how many hours per day are dedicated to dance. Without being able to see individual's responses this is unable to be determined.

## Perceptions of Strength Training for Dancers at a Midwestern University

One of the questions that was most compelling by the responses was question 13 asking the individuals “Who taught you strength training?” The choice with most responses was “Dance Teacher,” and even though this specifically aligns with what I have learned over the years, it made me consider the importance of the training the teachers receive or the personal opinions of the dance teachers. Dance teachers can create lesson plans and training programs without specific criteria to be met in most cases. A schoolteacher, for example, may be expected to hit certain learning standards with their lessons, but dance teachers are able to focus on what they see as being the most important. In this context, a dance teacher can define strength training in any manner and show an example to their students however they may choose. It is clear that many of the respondent’s dance teachers had a significant impact on their ideals and perceptions of strength training and how it should be performed. This leaves room to question how dance teachers should be qualified, certified, or to an extent educated on the importance of proper training techniques in dance.

The opinion statements the dancers could react to on a Likert scale was also extremely intriguing to assess due to the similarity in most answers. Almost all respondents agreed that strength training is essential to their overall development as a dancer. Through the research completed and reviewed, this response from the students at the university showcases a modern ideal in dance that is continuing to progress. Most students also respond that strength training should be part of every training program regardless of dance style. This highlights the importance strength training has to the students in some capacity. Two statements that had varying opinions included “ST increases muscle size” and “ST increases body weight.” The results varied with some individuals disagreeing, agreeing, or stating they have no opinion for each statement. As stated earlier, it can be common for dancers to experience a negative body

## Perceptions of Strength Training for Dancers at a Midwestern University

image due to the aesthetic requirements of dance. The respondent's knowledge base may also have an impact on their opinions towards the importance of strength training. There could be a potential relationship between the impact of strength training on performance and injury rate and their level of knowledge which may influence results. Strength training has the potential to increase muscle size or increase body weight depending on the individual. This does not mean that the individual is automatically aesthetically impacted in any capacity, but the opinions of dance and dance training may impact in this type of viewpoint. Most respondents did answer that they agreed that strength training enhances body and self-image which can positively impact the dancers' consistent participation. The range of opinions were even more varied for the statements, "ST is a masculine activity" and "ST is a feminine activity." This is extremely reflective of the diverse and inclusive dance community on The University of Akron campus. These statements were also reflected upon in the free response comment section as dancers stated that strength training can be for anyone.

To improve this study in the future the definition of "strength training" should be provided in order to have a deeper understanding of the dancers' perceptions. This could also potentially be a free response question provided in which individuals are able to share what they specifically view as strength training. To compare perceptions of strength training to other levels of dancers, it would be beneficial to utilize the survey with individuals who are current professionals, retired professionals, or individuals who currently teach and choreograph. Their role in the dance community could impact their specific opinions on the importance of strength training and how they personally utilize it themselves. This may also make the data more relatable to individuals who currently do not practice dance within higher education or have had this experience. This may also provide insight to the type of impact higher education has on the

## Perceptions of Strength Training for Dancers at a Midwestern University

opinions of strength training for their dancer. Having a larger sample size with individuals with many different backgrounds would provide a more insightful viewing of perceptions on the topic.

The implications of this study revealed that most dancers at The University of Akron place an emphasis on strength training in their own personal practice. The pre-professionals understand the relevance and importance strength training can play in their dance training and practice. This helps to reveal a growing change in the 21<sup>st</sup> century practices of dance and potentially recognizing it as an athletic activity more universally. The importance of strength training in dance does not impact the creation of art or recognizing dance as an art form; it helps to give it an even better opportunity to be a creation of beauty and importance. The body is a tool when creating choreography in dance and having a strong base to work from can be incredibly important. It is extremely exciting to see how opinions have continued to evolve and change as dancers find a deeper understanding of their bodies and are able to know the science behind what is being done. It is clear at the university level, or at The University of Akron, the education the students are receiving impacts their training practices.

The completion of the project has felt like a small culmination of what I have worked towards for the past five years. I thoroughly enjoyed being able to combine my two passions and bring them together in one project. The project overall may have been stress inducing at times, but I am glad to have had the opportunity to complete a project on this scale. As this is the field of research I hope to continue studying and supporting in the future, I hope to be able expand upon this information and data in the future. The final product of what I was able to create throughout a hectic senior year is something of which I am extremely proud. My hope for the

## Perceptions of Strength Training for Dancers at a Midwestern University

future is to continue to help and support the idea of dancers utilizing strength training to not only better themselves, but better the art of dance.

Works Cited

- Boeding, J. R. E., Visser, E., Meuffels, D. E., & de Vos, R.-J. (2019). Is training load associated with symptoms of overuse injury in dancers? A prospective observational study. *Journal of Dance Medicine & Science*, 23(1), 11–16.
- Brown, A. C., Wells, T. J., Schade, M. L., Smith, D. L., & Fehling, P. C. (2007). Effects of plyometric training versus traditional weight training on strength, power, and aesthetic jumping ability in female collegiate dancers. *Journal of Dance Medicine & Science*, 11(2), 38–44.
- Burrus, E., Torres-McGehee, T. M., Pritchett, K., Moore, K., Moore, E. M., & Anderson, S. (2018). Examination of female athlete triad components in a college dance company: 1289 board #97 May 31 8:00 AM - 9:30 AM...American College of Sports Medicine annual meeting, May 29-June 2, 2018, Minneapolis, Minnesota. *Medicine & Science in Sports & Exercise*, 50, 304. <https://doi-org.ezproxy.uakron.edu:2443/10.1249/01.mss.0000536083.86554.c2>
- Clippinger, K. S. (2016). In *Dance Anatomy and Kinesiology: Principles and exercises for improving technique and avoiding common injuries* (2nd ed., pp. 6–7), Human Kinetics.
- DiPasquale, S., & Wood, M. (2017). The effect of classical ballet and contemporary dance training on hip extensor flexibility and strength in novice dancers: A pilot study. *Performance Enhancement & Health*, 5(3), 108–114. <https://doi-org.ezproxy.uakron.edu:2443/10.1016/j.peh.2016.11.003>
- Farmer, C., & Brouner, J. (2021). Perceptions of strength training in dance. *Journal of Dance Medicine & Science*, 25(3), 160–168. <https://doi-org.ezproxy.uakron.edu:2443/10.12678/1089-313X.091521a>

## Perceptions of Strength Training for Dancers at a Midwestern University

- Guarino, L. (2015). Is dance a sport?: A twenty-first-century debate. *Journal of Dance Education, 15*(2), 77–80. <https://doi.org/10.1080/15290824.2015.978334>
- Harrington, H. (2020). Consumer dance identity: The intersection between competition dance, televised dance shows and social media. *Research in Dance Education, 21*(2), 169–187. <https://doi-org.ezproxy.uakron.edu:2443/10.1080/14647893.2020.1798394>
- Holland, A. (2017) *The effects of cross training on ballet dance*. [Senior Thesis, University of South Carolina] 166. Retrieved April 2, 2022, from [https://scholarcommons.sc.edu/senior\\_theses/166](https://scholarcommons.sc.edu/senior_theses/166)
- Merriam-Webster. (2022). *Merriam-Webster.com dictionary*. Retrieved April 2, 2022, from <https://www.merriam-webster.com/dictionary/athlete>
- Microsoft Forms. (2016). Microsoft Corporation, Redmond, WA.
- Pollatou, E., Bakali, N., Theodorakis, Y., & Goudas, M. (2010). Body image in female professional and amateur dancers. *Research in Dance Education, 11*(2), 131–137.
- Stracciolini, A., Hanson, E., Kiefer, A. W., Myer, G. D., & Faigenbaum, A. D. (2016). Resistance training for pediatric female dancers. *Journal of Dance Medicine & Science, 20*(2), 64–71. <https://doi-org.ezproxy.uakron.edu:2443/10.12678/1089-313X.20.2.64>
- Sukhatankar, O. (2015). Art-forms and dance-forms: Insights on their meaning, formation and classification. *Chitrolekha International Magazine on Art & Design, 5*(2), 74–81.
- You-jou Hung, Boehm, J., Reynolds, M., Whitehead, K., & Leland, K. (2021). Do single-leg balance control and lower extremity muscle strength correlate with ankle instability and leg injuries in young ballet dancers? *Journal of Dance Medicine & Science, 25*(2), 110–116.

## Appendix A

### Consent Statement to be sent as email invitation for recruitment

Dear UA Dancer,

You are invited to participate in a research project being conducted by Abigail Boenig-Dombek, an undergraduate student in the School of Exercise & Nutrition Sciences at The University of Akron. The purpose of this research is to gain a deeper insight into the opinions surrounding strength training related to the dance community.

If you decide to participate, you will be asked to complete an anonymous web-based survey. The survey should take no more than 15 minutes and I hope to recruit 75 participants.

The survey will not collect any identifiable information, and no one will be able to connect your responses to you. Your anonymity is further protected by not asking you to sign and return a consent form. Your completion of the survey will serve as your consent.

If you have any questions about this study, you may email me at [ajb308@uakron.edu](mailto:ajb308@uakron.edu) or contact my advisor, Professor Melissa Smith, at 330-972-4905 or [mgsmith@uakron.edu](mailto:mgsmith@uakron.edu). This project has been reviewed and approved by The University of Akron Institutional Review Board (IRB). If you have any questions about your rights as a research participant, you may call the IRB at (330) 972-7666. Please click on the link below to access the survey. Thank you.

LINK TO SURVEY HERE

**Appendix B**

**Modified Training Information Survey**

How many days each week do you typically dance during performance season/term time?	Open-Ended Response
How many days each week do you typically dance during off season/holidays?	Open-Ended Response
If UA does not have class/rehearsal/performance every day, do you still dance on your own on the spare days?	Yes
	No
	Not applicable
Do you exercise on your own on school/company days in addition to your school/company's dance practice?	Yes
	No
	Not applicable
Do you get one day of rest (no exercise at all) each week?	Yes
	No
When UA does not have dance practice together every day, are you required to carry out your own dance practice on your own?	Yes
	No
	Not applicable
Is strength training required as part of your overall dance training programme/contract?	Yes
	No
If you are required to practice dancing on your own, are you expected to strength train on your own?	Yes
	No
	Not applicable
If you are required to practice dancing on your own, are you expected to practice your specific dance genre on your own?	Yes
	No
	Not applicable
If strength training is not required as part of your overall dance training/contract, do you strength train on your own anyway?	Yes
	No
	Not applicable
Typically, how many days per week do you strength train?	Open-Ended Response
How long is a typical strength training session (mins)? (If your training differs please enter the average length)	Open-Ended Response

Perceptions of Strength Training for Dancers at a Midwestern University

How long do you typically dance each day (excluding any strength training) (mins)?	Open-Ended Response
Who taught you strength training techniques?	Dance teacher
	Strength and conditioning coach
	Another dancer
	Personal trainer
	Self taught
	Other (please specify)
For each of the following statements, please select the number corresponding to the following scale that best describes your opinion: Do not spend too much time on any statement, and answer how you feel about that each statement. (1=Strongly disagree, 2 = Disagree 3 = no opinion, 4 = agree, 5=Strongly agree)	ST is essential to my overall development as an dancer
	Women should participate in ST
	Men should participate in ST
	ST should be part of every training program regardless of dance style
	ST is beneficial to men
	ST is beneficial to women
	ST has beneficial effects on my dance performance
	My ST techniques are adequate so that I can avoid injury from ST
	My ST techniques are adequate to help me improve my performance
	ST increases muscle size
	ST increases muscle strength
	ST increases body weight
	ST helps me feel better – physically
	ST helps me feel better – mentally
	ST helps me look better
	ST is a masculine activity
	ST is a feminine activity
	ST is fun and enjoyable
	ST has significant health benefits
	ST enhances body and self-image
	ST is only possible with encouragement from others
Any other comments you wish to add relating to strength training?	Open-Ended Response