

## **Analysis of basic release techniques in archery athletes**

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### **Abstract**

Archery is an individual sport that requires consistent technique therefore this study aims to determine how good the basic archery techniques are for the male and female athletes of the archery club in Banyumas with a quantitative descriptive design using descriptive methods. The research population is archery athletes at the Taurus Archery School club, a total of 28 athletes. Samples were taken using purposive sampling totaling 14 athletes, with criteria for male and female adolescent athletes not in a state of illness. The instrument used is a Rubik or an assessment sheet by observing the object under study and analyzing using descriptive percentages. The results of the research on basic archery techniques for male athletes in the very poor category are 0.00% (0 athletes), less 71.43% (5 athletes), good 28.57% (2 athletes), and very good 0.00% (0 athletes). While the basic archery techniques for female athletes are in the very poor category of 0.00% (0 athletes), less than 100.00% (7 athletes), good 0.00% (0 athletes), and very good 0.00% (0 athletes). Based on the average value of basic archery techniques for female athletes of the Taurus Archery School club in the less category.

**Keywords:** analysis, basic technique, release technique, archery

### **INTRODUCTION**

Archery has a goal, namely releasing arrows to the midpoint of the target being targeted, and mastering perfect archery techniques that will produce complex and beautiful movements (Yachsie, 2019). Besides that, archery also requires consistent movement, training, and competition (Jannah, 2017). Good technique is very helpful in the aiming process, focusing the aim/hit on the target (Kim et al., 2021). Based on research (DeMare, 2021) and (Prasetyo, 2016) that the essence of the archery technique is: from a standing position, pulling half the pull then the maximum pull followed by holding the archery attitude, aiming and releasing arrows, as well as advanced techniques. The movement here is a series of archery techniques which means that the movement is very important if one technique is not done properly it will have an impact on the lack of accuracy of the arrows.

One of the exact determinants of arrows in archery is the release technique, this technique is the core of archery because in this technique athletes are required to be stable in the process of releasing arrows (Maguire et al., 2021). If the technique is not good then the technique will be wasted before because releasing arrows is one of the processes to get the essence of archery (Jones et al., 2021). Usually, an athlete will forget the correct movement when releasing an arrow so that the intended result is initially a yellow target but the arrows stray into the blue (Putranto et al., 2018). As for other opinions (Kolayis et al., 2014), the release technique is a movement that requires harmony in releasing arrows. This means that the release process can be stable or consistent if the archer is not tense in the fingers so that the release of the arrow is not forced. Of course, it can increase the accuracy of archers.

Based on the results of observations at the Taurus Archery School club in Banyumas Regency which were carried out on June 16, 2021, the results showed that archery accuracy Club members vary greatly. Common mistakes that are often made by archers regarding archery techniques, namely: (a) the pulling elbow is too high above the arrow line; (b) the front and back shoulders are too high; (c) the hands or fingers are too much in the bow; (d) the chest is puffed out; (e) bowstring touches the center of the chin; (f) body weight is placed on the heel; (g) no setup position; (h) pulls do not reach the holding position; (i) bowstring touches the center of the chin during anchoring; (j) pulls continuously with did not reach the holding position; (k) shot too quickly and lost connection with the back muscles; (l)

unstable arrow release; (m) tense/stiff pulling fingers; (l) lack of confidence with the mastered technique. In addition to the above, another problem is the lack of consistent athletes when releasing arrows, so the bow wobbles when the arrow is released and results in an inaccurate target. The latest data from the archery accuracy test by shooting 36 times the average score obtained is 210. This result is still far from the overall score of 360. Based on research by Prasetyo et al., (2018) in the sport of archery the results of performance and achievement can be seen in the achievement of the score, namely, the number of arrow hits on the target face or targets where the hit is the result of a release.

Release technique skills in archery are said to be successful when an archer athlete can release arrows smoothly and gets the highest point, namely X or 10 (Kridasuwarsa et al., 2020). Backed by research (Yachsie, 2021) In an archery teenager it is very important to be able to direct the arrow and enter the target or target face with the highest points, so it is said to be successful in carrying out a series of archery techniques. In line with research, (Zulkifli et al., 2013) and (Sudarsono, 2020) Accuracy in archery can be achieved through continuous and systematic exercises, by presenting distractions, practicing using keywords, practicing arranging routine activities, practicing controlling the eyes, practicing focusing or training methods provided by the trainer. Therefore, this research aims to find out how good is the basic release technique for male and female archery athletes at Taurus Archery School, Banyumas Regency.

**METHOD**

This research is research (quantitative) using descriptive methods. The data collection process was carried out on 17-14 June 2021 using observation and filling in the scoring rubric by the club judge Taurus Archery School in Banyumas Regency, amounting to three people. The population in this study are club athletes at Taurus Archery School in Banyumas Regency, totaling 28 players. The sample in this study was carried out by purposive sampling with the sample criteria namely: (1) male and female adolescent athletes, (2) archery athletes, and (3) not in a state of illness. Based on this, 14 athletes were fulfilled, with details of 7 male athletes and 7 female athletes. In this study the researchers carried out several steps, including (1) compiling an assessment Rubik; (2) setting up a camera to record the movement of the release technique; (3) then the athlete releasing the arrows as well as possible; (3) the results of the assessment are assessed by a Nationally licensed trainer and (4) archery with a distance of 10 meters. This research was carried out during the Covid-19 pandemic, so researchers implemented strict health protocols, namely always checking the athlete's body temperature before starting the study, providing water and soap so that athletes always wash their hands first, the distance between athletes is not too close, and all those involved in this study always use masks/face shields. This instrument uses a closed questionnaire, namely a rubric or observation sheet by observing the object under study. Research data was taken by making observations via video which was documented at the time of release. The athlete performs a series of 6 series of archery movements or you can say 1 session. The following is a scoring indicator to assess the release technique.

Table 1. Release Engineering Assessment Rubric

Variable	Aspect	Indicator
Basic release technique	Prefix	1. Stand facing the target 2. The body takes a standing position 3. Mounting arrows
	process	4. Draw the bow to the max 5. aim at the target 6. Followed by seeing that the fingers are not gripping the bowstring
	<i>follow through</i>	7. Release properly and relax 8. Hands backward by tracing the chin

		9. Maintain that position until the arrow lands on the target bearing
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This questionnaire was adapted from research (Vendrame et al., 2021) and then test the validity using the product moment correlation formula & reliability test Cronbach's alpha 0.896, which means the questionnaire is valid and reliable, then after the data is collected is analyzed using descriptive percentages.

**RESULTS AND DISCUSSION**

**Results**

Table 2. Frequency Distribution of Basic Release Techniques in Male Athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	2	28.57%
3	45%-64%	Not enough	5	71.43%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 2, shows that the basic release techniques for the male and female athletes of the Taurus Archery School club are in the category of "very poor" at 0.00% (0 athletes), "less" at 71.43% (5 athletes), "good" by 28.57% (2 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of basic release techniques in the male athletes of the Taurus Archery School club in the less category.

Table 3. Distribution of Preliminary Stage Frequency of Male Athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	1	14.29%
3	45%-64%	Not enough	6	85.71%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 3, shows that the basic release technique for the male athletes of the Taurus Archery School club based on the initial stage is in the "very poor" category of 0.00% (0 athletes), "less" 85.71% (6 athletes), "good" by 14.29% (1 athlete), and "very good" by 0.00% (0 athletes). Based on the average value of basic release techniques in the male athletes of the Taurus Archery School club based on the initial stage in the less category.

Table 4. Stage Frequency Distribution During the release process for Male Athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	2	28.57%
3	45%-64%	Not enough	5	71.43%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 4, shows that the basic release techniques for the male athletes of the Taurus Archery School club based on the stage during the release process are in the "very poor" category of 0.00% (0 athletes), "less" of 71.43% (5 athletes), "good" by 28.57% (2 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of the basic release technique in the male athletes of the Taurus Archery School club based on the stage during the release process, it is in the less category.

Table 5. Follow-through frequency distribution for male athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	2	28.57%
3	45%-64%	Not enough	5	71.43%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 5, shows that the basic release technique for the male athletes of the Taurus Archery School club based on the follow-through stage is in the "very poor" category of 0.00% (0 athletes), "less" is 71.43% (5 athletes), "good" by 28.57% (2 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of basic release techniques in the male athletes of the Taurus Archery School club based on the follow-through stage in the less category.

Table 6. Frequency Distribution of Basic Release Techniques in Female Athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	0	0.00%
3	45%-64%	Not enough	7	100.00%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 6, shows that the basic release technique for the female athletes of the Taurus Archery School club is in the category of "very poor" at 0.00% (0 athletes), "less" at 100.00% (7 athletes), "good" at 0.00% (0 athletes), and "very good" of 0.00% (0 athletes). Based on the average value of basic release techniques on female athletes from the Taurus Archery School club in the less category.

Table 7. Frequency Distribution of Female Athletes' Initial Stage

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	0	0.00%
3	45%-64%	Not enough	7	100.00%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 7, shows that the basic release technique for the female athletes of the Taurus Archery School club based on the initial stage is in the "very poor" category of 0.00% (0 athletes), "less" at 100.00% (7 athletes), "good" by 0.00% (0 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of basic release techniques on female athletes from the Taurus Archery School club based on the initial stage in the less category.

Table 8. Stage Frequency Distribution During the female athlete release process

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	2	28.57%
3	45%-64%	Not enough	5	71.43%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 8, shows that the basic release technique for the female athletes of the Taurus Archery School club based on the stage during the release process is in the "very poor" category of 0.00% (0 athletes), "less" 71.43% (5 athletes) " good" by 28.57% (2 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of the basic release techniques for female athletes in the less category.

Table 9. Follow-through Frequency Distribution of Female Athletes

No	intervals	Category	Frequency	Percentage
1	85%-100%	Very good	0	0.00%
2	65%-84%	Well	2	28.57%
3	45%-64%	Not enough	5	71.43%
4	25%-44%	Very less	0	0.00%
Amount			7	100%

Based on table 9, shows that the basic release technique for the female athletes of the Taurus Archery School club based on the follow-through stage is in the "very poor" category of 0.00% (0 athletes), "less" is 71.43% (5 athletes)," good" by 28.57% (2 athletes), and "very good" by 0.00% (0 athletes). Based on the average value of the basic release technique for female athletes from the Taurus Archery School club in the less category.

## Discussion

This study aims to determine the basic release techniques for Taurus Archery School club athletes based on the initial stage, maintaining the release attitude, during the release process, and following through. In the research here, the results show that there are still some fundamental errors in the release technique, by the results of the reality that occurred at the Taurus Archery School club. This means that there are still some mistakes made by athletes when performing release techniques. The result has an impact on training/competition, this player does not get an automation of the correct series of release motions. This should be fixed because it will have an impact on competition and will continue until you become an elite/professional athlete.

Good mastery of basic techniques is needed, especially in archery (Cheng et al., 2021). (Spratford & Campbell, 2017) states that technique is a procedure that is developed based on practice and aims to find a solution to a particular movement problem in the most economical and useful way. Aligned with research (Yildiz Durak, 2019) Both of these patterns can be implemented perfectly, players must be able to master the basic techniques well. Archery movement is a monotonous movement so if an archer cannot perform archery movements correctly and consistently, the results obtained will not be as expected (Munawar et al., 2013) and (Sarro et al., 2021). The most dominant basic technique is used to achieve perfect points when releasing arrows (Ogasawara et al., 2021). Basic techniques in sports can also influence success in achieving achievements, the basic techniques in question are the basic techniques of archery athletes, especially the eighth technique, namely release which means to achieve good performance as well as the sports activities analyzed including the techniques which contain 4 stages: (1) prefix; (2) release process; (3) maintain the release; (4) follow through professionally with the hope of obtaining optimal performance in this sport of archery, in order to minimize the possibility of frequent errors.

### Preliminary Stages

The mistakes that often occur in male and female athletes in the early stage indicators are when pulling the bow the fingers of the hand grip the bowstring so that when pulling the right hand it is tense, this movement causes the arrow to rest on the errors in the handle resulting in the release of the arrow going up towards above, so it is not right on target. Based on research (Guo et al., 2015) and (Hamilton et al., 2021) the release technique at this initial stage is the determinant of the release of the arrow, supported by opinions (Yasin et al., 2019) and (Butnariu et al., 2018) the propulsion of an arrow from a bow towards the intended target also has an effect if the release is unstable. This initial stage also includes the basic components that archers should master, so that subsequent techniques will be in harmony with the movements that have been taught (Lu et al., 2021). This

means that male and female athletes when performing the prefix release, the fingers and arms look very stiff, but from this analysis, female athletes experience more errors when performing this technique due to a lack of continuous training so that the athlete does not feel that the release technique is lacking. appropriate.

### **Stages of the Release Process**

The basic technique of releasing the archery athlete at the Taurus Archery School club is based on the stage when releasing this arrow / release in the less category, because when releasing the arrow the athlete actually lowers so that the fingers of the right hand fall off the track under the chin, which causes the hips to be out of alignment or hips forward. The movement that should be when releasing the arrow, the fingers, especially the index finger, remains in a position under the chin after the arrow is released, the index finger goes along the chin to below the ear (Arisman et al., 2021). Based on research (Gezgin et al., 2018) This technical movement is very influential on the results of hitting arrows if this process is not correct then the results of hitting arrows will miss far and can even be released or missed. Aligned with research (Putranto et al., 2018) and (Loh & Chong, 2018) that one of the causes of misses or loose arrows is improper technique. In line with research (Prasetyo, 2016) that the inaccuracy of the arrows was due to the grip of the fingers of the bow arrows. It can be concluded by assuming this is important for an archery athlete to master the release technique in the stages of releasing arrows and it is hoped that athletes will be able to do this technique in a relaxed condition and remain consistent.

### **Follow Through**

Then the last basic release technique is based on the stage after releasing the arrow, in this position there are still many athletes who make mistakes as in this movement the right hand should remain in the position of sticking under the jaw but not sticking, then there is still tension after releasing the arrow, the fingers of the pulling hand do not go down the chin and the left hand goes down before the arrow sticks to the target bearing. Based on research (Saparuddin, 2019) and (Simsek & Ertan, 2014) that archery athletes who when releasing arrows with their fingers tracing the chin and maintaining this attitude are better than athletes who release arbitrarily. Technical training can be done by short-range archery or balance shooting (Hamilton et al., 2021) and (Seung, 2018). For this reason, athletes with unstable techniques should put more pressure on shooting at short distances/balance soot, the hope is that apart from not damaging the arrows if shooting at long distances, they have the advantage that they do not require too long distances and this short distance training as well. solutions provided to improve techniques from initial techniques, and processes to follow through.

Even though this research was carried out as well as possible, there were still limitations to this research, namely the research was carried out during the COVID-19 pandemic, which meant that researchers could not control other factors that could affect student tests, especially psychological and physiological factors, and did not analyze the validity of Aiken because this validation was validation to create instruments.

## **CONCLUSION**

Archery movement is a monotonous movement so if an archer cannot perform archery movements correctly and consistently, the results obtained will not be as expected. Basic techniques are the most dominant component used to achieve perfect points when releasing arrows, then in archery athletes are required to master all 9 techniques. This means that it can be used as a reference for further research due to the trainer's limited knowledge related to the analysis of good and consistent archery techniques.

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