

## Content Validity of Circuit Training Program and Its Effects on The Aerobic Endurance of Wheelchair Tennis Athletes

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### ARTICLE INFO

#### Article history

Received: March 25, 2021

Accepted: June 22, 2021

Published: July 31, 2021

Volume: 9 Issue: 3

Conflicts of interest: None

Funding: None

### ABSTRACT

**Background:** “Exercise is an activity to improve technical and physical competence of athletes”, most sports require an excellent physical aspect to win. Aerobic endurance is an essential point in the preparation of a wheelchair tennis training program. **Aim:** This research is to validate the circuit training program and test the exercise program on the aerobic endurance of wheelchair tennis athletes. **Method:** This research is development research with qualitative and quantitative approaches. Participants are wheelchair tennis athletes with ten males and four females, height 156-167± cm, weight 50-70± kg, age 31-35. Participants in the program validation were seven nationally licensed physical fitness trainers. The first stage qualitatively examines documents in articles, ebooks, textbooks to design the program. The second stage quantitatively applies the Delphi technique to assess the prepared training program. The third stage analyzes the assessment results with the content validity ratio formula and, the fourth stage tests the exercise program for six weeks. The instrument used is a multistage fitness test. **Results:** It has been found that the assessment items from seven experts show the content validity ratio value is 1.00, so it can be categorized as having good content validity. It has been found the mean posttest (N=14, M=249.14, SD=16.033) and posttest (N=14, M=241.71, SD=17.166). It has been found that hypothesis testing using paired samples t-test analysis ( $p=0.000<0.05$ ). **Conclusion:** the circuit training exercise program has good validity, then based on the effectiveness test, there is an increase in the aerobic endurance of wheelchair tennis athletes.

**Key words:** Content validity, circuit training, aerobic endurance, wheelchair tennis athletes

### INTRODUCTION

Disability is a person's limitations to perform specific roles and tasks. Therefore, physical disability is the third most common developmental disability after mental retardation and autism (Cooley, 2004). Wheelchair tennis is one of the paralympic sports carried out by tennis athletes with disabilities, especially the physically disabled. Sanchez, 2021; Sánchez, Torres & Sanz, 2016). Today's participation in wheelchair tennis has shown comprehensive progress of athletes and coaches (Sánchez, 2021; Sánchez, Torres & Sanz, 2016). The task of a trainer is to optimally improve technical, psychological, physiological and physical abilities and be able to control the exercise program so as not to cause overtraining. Lovell et al., 2013). Previous research reveal that wheelchair tennis players could cover a distance of  $2816 \pm 844$  m with an average heart rate of 66-75% of the highest heart rate during a match (Sanchez et al., 2016). Good physical qualities have been shown to increase the performance level of athletes in achieving successful sports careers (Till, Scantlebury & Jones, 2017).

The training program for the development of athletes with disabilities has not shown optimal improvement. It is

still rare for research to replicate previous research to get a new paradigm (Dehghansai et al., 2017). Lack of resources is a classic problem that is often mentioned in the previous literature. In the study of athletes with disabilities, it is stated that there is still a lack of training programs that are tailored to the suitability of each athlete with disabilities (Liow & Hopkins, 1996; Dehghansai et al., 2017). The exercise program must be explicitly programmed to improve health and improve athlete performance (Alver, Sell & Deuster, 2017).

Physical exercise is described as the capacity of muscle groups, and the cardiovascular system is structured to improve the physical condition (Yanci et al., 2015; Frederiksen et al., 2018; Song et al., 2018). Lack of physical activity can reduce the quality of health, such as muscle weakness, decreased levels of cardiovascular, neurological and endocrine (Bernardi et al., 2021). Cardiorespiratory is a fundamental aspect of individual fitness related to the lungs, heart and the performance of blood vessels and capillaries to transport oxygen throughout the body to produce energy (Ndayisenga et al., 2019).

Endurance training requires physiological and psychological regulation by regulating exercise intensity. Thus,

endurance training can be carried out optimally (Hettinga et al., 2017). Training preparation must be progressive, and endurance training must begin with warming up to increase heart rate, increase metabolic productivity, which can be done gradually in a short 3 to 5 minutes (Alver, Sell & Deuster, 2017). Besides that, wheelchair tennis athletes are categorized with permanent lower extremity disorders such as amputations and spinal disorders (Mason et al., 2020). al, 2013). Therefore, aerobic endurance training programs for people with disabilities should be adjusted (Ndayisenga et al., 2019).

The description above shows that it is crucial to develop an appropriate and appropriate aerobic endurance training program for wheelchair tennis athletes. How to arrange an appropriate and appropriate exercise program to optimize aerobic endurance in wheelchair tennis athletes? Therefore, to answer these problems, the author aims to validate the circuit training program to experts and then test the circuit training program for wheelchair tennis athletes, hoping that the training program that has been compiled can increase aerobic endurance in wheelchair tennis athletes.

## METHOD

### Participants and Study Design

This study is an experimental study with field testing. The population in this study amounted to 20 participants, then the sample was ten male athletes and four female athletes with a height of 156-167± cm, weight 50-70± kg aged 31-35 years, had experience being an athlete, had been won the 2016 national competition and other national matches. Then the inclusion criteria are as follows: (1) the athlete is willing to carry out the training program that has been prepared, (2) the athlete is in good health condition, while the exclusion criteria are as follows: the athlete is not willing to run the training program that has been prepared, (2) the athlete is not in good health condition. Then, the participant to assess an aerobic endurance training program is a national licensed physical trainer. This study was approved by the administrators of the National Paralympic Committee of Yogyakarta Province and wheelchair tennis athletes.

This is a development research which is an effort to develop and validate an existing product, or it is used to find knowledge and answer the problems being faced (Hamzah, 2019). Then the research approach used is qualitative and quantitative (Noroozi et al., 2020). This research has four stages: the first stage qualitatively, the researcher examines documents in the form of articles, ebooks that are relevant to designing an exercise program, the second stage quantitatively applies the Delphi technique (Wilpers et al., 2021; Dewangga, 2020; Dewangga et al., 2021) researchers met directly with seven experts to assess the program that had been prepared, in the third stage the researchers analyzed the assessment results from seven experts by applying the content validity ratio (CVR) formula (Sucipto et al., 2019; Dewangga et al., 2021), after the program can be said to have good content validity, the fourth stage is to test the effectiveness of the training program, where athletes carry out the

program that the researcher has prepared for 18 meetings. The test instrument in the effectiveness test is the Multistage Fitness Test (MFT), which is to measure aerobic endurance. The instrument was carried out in the initial test before treatment and the final test after treatment to see an increase in aerobic endurance in wheelchair tennis athletes.

### Procedure

The implementation of the intervention circuit training program was carried out on the tennis court, and then the tools used were whistles to give cues, cones, tennis balls, wheelchairs, medicine balls weighing 1-2 kg, barbells weighing 1-2 kg. Before intervening in the circuit training program, the athlete must be in good health. The first stage procedure is for the coach to give instructions and provide examples of the techniques used in the training program, the second stage is for athletes to be guided to do sufficient static and dynamic warm-ups, then circuit training exercises are carried out according to the program prepared. The following circuit training program that has been compiled can be seen in table 1.

### Statistical Analysis

In this study, to analyze the content validity of the circuit training program, using the content validity ratio (CVR) formula that was coined by Lawshe as follows:  $CVR = (n_e - N/2) / (N/2)$  (Lawshe, 1975). In this calculation, the author uses the help of excel formulas. Meanwhile, in the effectiveness test, the experimental method is one group-pretest-posttest design with data analysis using statistical product and service solutions (SPSS).

## RESULTS

### Content Validity

Based on seven validation experts, the training circuit program can be said to have good validity as evidenced by the results of calculations using the content validity ratio (CVR) formula, it has been found that all items get a value of 1.00. In other words, the seven validation experts answered that the circuit training program that was developed was essential. Therefore, the program compiled can be concluded as valid and can be given for the intervention of wheelchair tennis athletes. The following results from expert validation can be seen in table 2.

### Hypothesis Testing

Based on Table 3, it was found that the posttest results (N=14, M=249.14, SD=16.033) were better than the pretest results (N=14, M=241.71, SD=17.166), then the paired samples t-test hypothesis test showed similar results. significant ( $p=0.000 < 0.05$ ). Therefore, it can be concluded that the circuit training program that has been prepared provides a significant change in the aerobic endurance of wheelchair tennis athletes

**Table 1.** Circuit Training Program that has been prepared

Week	Meeting	Training Items	Training Frequency
1-2	1-6	Post1 Tricep extension Post2 Barbel lateral and front raise Post3 Spider run Post4 Run back and forth Post5 Shake left and right on the chair Post6 Coordination with ball	Frequency: 3 Intensity: low Sets: 4 Work Time of 1 Move: 30-40 seconds Interval: 20 seconds Break: 2 minutes
3-4	7-12	Post1 Spider run Post2 Run and back forth Post3 Coordination with ball Post4 overhead medicine ball throw Post5 Side arm medicine ball throw Post6 Shoken	Frequency: 3 Intensity: low-moderate Sets: 4 Work Time of 1 Move: 30-40 seconds Interval: 40 seconds Break: 3 minutes
5-6	12-18	Post1 Side arm medicine ball throw Post2 overhead medicine ball throw Post3 Spider run Post4 Run and back forth Post5 Hexagonobstacle Post6 Coordination with ball throw	Frequency: 3 Intensity: low-moderate Sets: 4 Work Time of 1 Move: 40-90 seconds Interval: 50 seconds Break: 4 minutes

**Table 2.** Validity Results of Circuit Training Program for Wheelchair Tennis Athletes

No.	Indicator	Number of Panels							CVR
		1	2	3	4	5	6	7	
1	The intensity given to wheelchair tennis athletes is appropriate	1	1	1	1	1	1	1	1.00
2	The interval given to wheelchair tennis athletes is appropriate	1	1	1	1	1	1	1	1.00
3	The number of sets given to wheelchair tennis athletes is appropriate	1	1	1	1	1	1	1	1.00
4	The frequency given to wheelchair tennis athletes is appropriate	1	1	1	1	1	1	1	1.00
5	The recovery given to wheelchair tennis athletes is appropriate	1	1	1	1	1	1	1	1.00
6	The training model for each post is in accordance with the purpose of endurance training	1	1	1	1	1	1	1	1.00
7	The characteristics of the program are in accordance with the general periodization norms	1	1	1	1	1	1	1	1.00
8	The equipment used is in accordance with the purpose of the circuit training	1	1	1	1	1	1	1	1.00
9	The number of training posts is in accordance with the purpose of circuit training	1	1	1	1	1	1	1	1.00
10	The training is in accordance with the aerobic energy system	1	1	1	1	1	1	1	1.00

**Table 3.** Hypothesis Test Results

Variable	Mean	Std. Dev	Sig. (2-tailed)
Pretest- aerobic endurance	241.71	17,166	
Posttest- aerobic endurance	249.14	16.033	0.000

## DISCUSSION

The results of the content validity test using the content validity ratio (CVR) formula were found that the assessment items from seven experts showed the number 1.00. Therefore, the program designed can be concluded to have good content validity. It is reinforced from some literature that the

value of the ratio with an indicator score of -1 to 1 or closer to 1, the validity can be concluded to be high (Lawshe, 1975). Meanwhile, according to Hendriyadi (2017), if the value of the content validity ratio is greater than 0, the more essential or the content validity can be said to be high. Thus, the circuit training program is feasible to be tested in increasing the aerobic endurance of wheelchair tennis athletes.

Results intervention during 18 meetings using a circuit program found the results that wheelchair tennis athletes experienced a significant increase in the aspect of aerobic endurance ( $p = 0.000 < 0.05$ ), then the mean value in the posttest results obtained results ( $N = 14$ ,  $M = 249.14$ ,  $SD = 16.033$ ) which is greater than the mean value in the pretest score ( $N=14$ ,  $M=241.71$ ,  $SD=17.166$ ). This research is reinforced by several previous studies. The results of research (Ikenna et al., 2020; Khattak et al., 2020; Ndayisenga, 2019) explain that an exercise program using the circuit method or an exercise program that moves posts repeatedly for six weeks can increase aerobic endurance.

Aerobic endurance is an essential point in the preparation of a wheelchair tennis training program. Following previous research, the fitness of wheelchair tennis players is influenced by the level of cardiorespiratory fitness and coordination of the upper extremities (De Lira et al., 2010; Ponzano & Gollin, 2017). Therefore, a program that is suitable for wheelchair athletes must be arranged. Experts must validate the training program prepared before being implemented in athletes to have validity.

Validation is an integral part of a compilation design on development research (Tomoliyus et al., 2018). Validation is to describe the extent to which circuit training program designs are designed to improve endurance aspects in wheelchair tennis athletes. Validation has several types: construct validity, criterion validity, and content validity (Davarzani et al., 2020). The early stages of designing a content validity program refer to and see the extent to which items are related to the researched or conceptual dimensions (Tomoliyus, 2018, Noroozi et al., 2020; Embretson, 2007; Hsu et al., 2012).

A circuit training program combined with weight training is an effective strategy to improve lung ventilation, functional capacity, strength and oxygen consumption (Romero, Martinez & Alcaraz, 2013). Research has shown that circuit training combined with weight training can increase maximal oxygen consumption, functional capacity, and maximal pulmonary ventilation (Brentano et al., 2008). Then Berg et al. (2010) states that a circuit training program with low to moderate intensity increased cardiorespiratory endurance.

### Limitations

This study focuses on developing and validating a circuit training program to improve the aerobic endurance of wheelchair tennis athletes. The results of this study were proven to increase the aerobic endurance of wheelchair tennis athletes but the samples used were relatively small and there was no comparison group.

### CONCLUSION

Based on the results and discussion, the authors conclude that the circuit training program that has been prepared has good content validity, then based on the effectiveness test, there has been an increase in aerobic endurance in wheelchair tennis athletes.

### REFERENCES

- Alver, B. A., Sell, K., & Deuster, P. A. (Eds.). (2017). *NSCA's essentials of tactical strength and conditioning*. Human Kinetics
- Bernardi, M., Romano, S., Squeo, M. R., Guerra, E., Adami, P. E., Alviti, F., & Spataro, A. (2021). Aerobic fitness is a potential crucial factor in protecting paralympic athletes with locomotor impairments from atherosclerotic cardiovascular risk. *Sport Sciences for Health*, 17(2), 363-374. <https://doi.org/10.1007/s11332-020-00698-4>
- Brentano, M. A., Cadore, E. L., Da Silva, E. M., Ambrosini, A. B., Coertjens, M., Petkowicz, R., & Kruegel, L. F. (2008). Physiological adaptations to strength and circuit training in postmenopausal women with bone loss. *The Journal of Strength & Conditioning Research*, 22(6), 1816-1825. <https://doi.org/10.1519/JSC.0b013e31817ae3f1>
- Cooley, W. C. (2004). Providing a primary care medical home for children and youth with cerebral palsy. *Pediatrics*, 114(4), 1106-1113. <https://doi.org/10.1542/peds.2004-1409>
- Davarzani, S., Helzer, D., Rivera, J., Saucier, D., Jo, E., Chander, H., & Petway, A. (2020). Validity and Reliability of Strive™ Sense3 for Muscle Activity Monitoring During the Squat Exercise. *International Journal of Kinesiology & Sports Science*, 8(4), 1. <https://doi.org/10.7575/aiac.ijkss.v.8n.4p.1>
- Dehghansai, N., Lemez, S., Wattie, N., & Baker, J. (2017). A systematic review of influences on development of athletes with disabilities. *Adapted physical activity quarterly*, 34(1), 72-90. <https://doi.org/10.1123/APAQ.2016-0030>
- De Lira, C. A. B., Vancini, R. L., Minozzo, F. C., Sousa, B. S., Dubas, J. P., Andrade, M. S., & Da Silva, A. C. (2010). Relationship between aerobic and anaerobic parameters and functional classification in wheelchair basketball players. *Scandinavian Journal of Medicine & Science in Sports*, 20(4), 638-643. <https://doi.org/10.1111/j.1600-0838.2009.00934.x>
- Dewangga Yudhistira, T. (2020). Content Validity of Agility Test in Karate Kumite Category. *Journal of Human Movement and Sports Sciences*, 8(5), 211-216. <https://doi.org/10.13189/saj.2020.080508>
- Dewangga Yudhistira, Siswantoyo, Tomoliyus, Sumaryanti, Devi Tirtawirya, Paryadi, La Ode Adhi Virama, Sinta Naviri, Noralisa (2021). Development of Agility Test Construction: Validity and Reliability of Karate Agility Test Construction in Kata Category. *International Journal of Human Movement and Sports Sciences*, 9(4), 697 - 703. DOI: 10.13189/saj.2021.090413.

- Embretson, S. E. (2007). Construct validity: A universal validity system or just another test evaluation procedure?. *Educational Researcher*, 36(8), 449-455. <https://doi.org/10.3102/0013189X07311600>
- Frederiksen, A., McLeman, R. A., & Elcombe, T. L. (2018). Building backyard ice rinks in Canada: An exploratory study. *Leisure/Loisir*, 42(1), 47-68. <https://doi.org/10.1080/14927713.2017.1411822>
- Hamzah, A. (2019). Metode Penelitian & Pengembangan (Research & Development). Malang: Literasi Nusantara Abadi.
- Hendryadi, H. (2017). Validitas isi: tahap awal pengembangan kuesioner. *Jurnal Riset Manajemen Dan Bisnis (JRMB) Fakultas Ekonomi UNIAT*, 2(2), 169-178. <https://doi.org/10.36226/jrmb.v2i2.47>
- Hsu, I. Y., Su, T. S., Kao, C. S., Shu, Y. L., Lin, P. R., & Tseng, J. M. (2012). Analysis of business safety performance by structural equation models. *Safety Science*, 50(1), 1-11. <https://doi.org/10.1016/j.ssci.2011.04.012>
- Hettinga, F. J., Renfree, A., Pageaux, B., Jones, H. S., Corbett, J., Micklewright, D., & Mauger, A. R. (2017). Regulation of endurance performance: new frontiers. *Frontiers in physiology*, 8, 727 <https://doi.org/10.3389/fphys.2017.00727>
- Ikenna, U. C., Ngozichi, O. G., Ijeoma, I., Ijeoma, N., Ifeanyi-chukwu, N., & Martin, O. C. (2020). Effect of Circuit Training on the Cardiovascular Endurance and Quality of Life: Findings from an Apparently Healthy Female Adult Population. *Journal of Applied Life Sciences International*, 1-8. DOI: 10.9734/jalsi/2020/v23i330148
- Khattak, I. U., Islam, S. Z. U., & Manzoor, M. (2020). Effects of Circuit Training on Cardio Respiratory Endurance Among College Students. *Global Regional Review*, 3, 40-47. [https://doi.org/10.31703/grr.2020\(V-III\).05](https://doi.org/10.31703/grr.2020(V-III).05)
- Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel psychology*, 28(4), 563-575. <https://doi.org/10.1111/j.1744-6570.1975.tb01393.x>
- Liow, D.K., & Hopkins, W.G. (1996). Training practices of athletes with disabilities. *Adapted Physical Activity Quarterly*, 13(4), 372-381. doi:10.1123/apaq.13.4.372 <https://doi.org/10.1123/apaq.13.4.372>
- Lovell, D. I., Bousson, M., & McLellan, C. (2013). The use of performance tests for the physiological monitoring of training in combat sports: A case study of a world ranked mixed martial arts fighter. *J Athl Enhancement*, 2(1), 2-6. <https://doi.org/10.4172/2324-9080.1000104>
- Mason, B. S., van der Slikke, R. M., Hutchinson, M. J., & Goosey-Tolfrey, V. L. (2020). Division, result and score margin alter the physical and technical performance of elite wheelchair tennis players. *Journal of sports sciences*, 38(8), 937-944. <https://doi.org/10.1080/02640414.2020.1737361>
- Ndayisenga, J. (2019). Circuit training intervention for adaptive physical activity to improve cardiorespiratory fitness, leg muscle strength static and balance of intellectually disabled children. *Sport Mont*, 17(3), 97-100. <https://doi.org/10.26773/smj.191019>
- Noroozi, F., Eisapareh, K., Bahadori, A., Ghahremani, L., Cousins, R., & Mokarami, H. (2020). Development and validation of dust exposure prevention questionnaire for cardiovascular patients based on the health belief model. *BMC Public Health*, 20(1), 1-11 <https://doi.org/10.1186/s12889-020-09871-3>
- Ponzano, M., & Gollin, M. (2017). Physical demand of wheelchair tennis match-play on hard courts and clay courts. *International Journal of Performance Analysis in Sport*, 17(4), 656-665. <https://doi.org/10.1080/24748668.2017.1384975>
- Romero-Arenas, S., Martínez-Pascual, M., & Alcaraz, P. E. (2013). Impact of resistance circuit training on neuromuscular, cardiorespiratory and body composition adaptations in the elderly. *Aging and disease*, 4(5), 256. doi: 10.14336/AD.2013.0400256
- Sánchez-Pay, A., Torres-Luque, G., & Sanz-Rivas, D. (2016). Match activity and physiological load in wheelchair tennis players: a pilot study. *Spinal Cord*, 54(3), 229-233. <https://doi.org/10.1038/sc.2015.107>
- Sánchez-Pay, A., Martínez-Gallego, R., Crespo, M., & Sanz-Rivas, D. (2021). Key Physical Factors in the Serve Velocity of Male Professional Wheelchair Tennis Players. *International Journal of Environmental Research and Public Health*, 18(4), 1944. <https://doi.org/10.3390/ijerph18041944>
- Sindall, P., Lenton, J. P., Tolfrey, K., Cooper, R. A., Oyster, M., & Goosey-Tolfrey, V. L. (2013). Wheelchair tennis match-play demands: effect of player rank and result. *International Journal of Sports Physiology and Performance*, 8(1), 28-37. <https://doi.org/10.1123/ijsp.8.1.28>
- Song, J., Kim, J., & Cho, K. (2018). Understanding users' continuance intentions to use smart-connected sports products. *Sport Management Review*, 21(5), 477-490. <https://doi.org/10.1016/j.smr.2017.10.004>
- Sucipto, S., Tarigan, B., Ma'mun, A., & Yudiana, Y. (2019, September). Content Validity of the Enjoyment Instrument in Physical Education Learning: A Field Study. In *3<sup>rd</sup> International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2018)* (pp. 389-391). Atlantis Press. <https://doi.org/10.2991/icsshpe-18.2019.107>
- Till, K., Scantlebury, S., & Jones, B. (2017). Anthropometric and physical qualities of elite male youth rugby league players. *Sports Medicine*, 47(11), 2171-2186. <https://doi.org/10.1007/s40279-017-0745-8>
- Tomoliyus, M., Tirtawirya, D., Sudarko, R. A., Arif, H. A., & Widodo, H. (2018, December). The Contest Validation of Circuit Training Design to Improve Biomotor Components in Table Tennis Performance. In *2<sup>nd</sup> Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1<sup>st</sup> Conference on Interdisciplinary Approach in Sports (CoIS 2018)* (pp. 336-338). Atlantis Press. <https://doi.org/10.2991/yishpess-cois-18.2018.83>
- Van Den Berg, R., De Groot, S., Swart, K. M., & Van Der Woude, L. H. (2010). Physical capacity after 7 weeks of low-intensity wheelchair training. *Disability and Rehabilitation*, 32(26), 2244-2252. <https://doi.org/10.3109/09638288.2010.535688>
- Wilpers, A., Bahtiyar, M. O., Wall, D., Kobler, K., Sadler, L. S., Dixon, J. K., & Kennedy, H. P. (2021). Modified Delphi study on nursing practice and science

in fetal care. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 50(1), 55-67. <https://doi.org/10.1016/j.jogn.2020.09.158>  
Yanci, J., Granados, C., Otero, M., Badiola, A., Olasagasti,

J., Bidaurrazaga-Letona, I., & Gil, S. M. (2015). Sprint, agility, strength and endurance capacity in wheelchair basketball players. *Biology of Sport*, 32(1), 71. doi: 10.5604/20831862.1127285