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The relationship between motivation
and perceived autonomy of individual and
team sports athletes with disabilities.

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Abstract

The relationship between motivation and perceived autonomy of individual and team sports athletes with disabilities.

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Psychological preparation is important for athlete's development and success in sport alongside with physical training. Satisfaction of psychological needs such as motivation and perception of autonomy given by coach is very important in understanding of athlete's behavior and performance. Over the last three-decades scholars focused on investigation of motivation influence on performance and autonomy – supportive coaching of

able – bodied athletes, however, only few researches dedicated to paralympic sport. Many previous researches showed differences between able – bodied and disabled athletes in terms of motivational behavior reasons to participate in sport, win orientation, competitiveness and autonomy perception. In addition, in addition, such factors as adaptive equipment, classification, venue accessibility and other paralympic sport specific factors also could make influence on athletes' motivation. Therefore, implications of previous researches about able – bodied athletes cannot be directly applied on athletes with disabilities.

The perception of autonomy given by coach is different in team and individual sport types because of its nature. For example, in individual sport athlete rely only on himself or herself, focus on skills development and need to be concentrated during whole competition. In team sport, where all athletes pursuit team goal, as well as concentration and skills, atmosphere and support in team can be crucial. Sometimes, team sports do not require excellent skill development but require fulfillment of team goals. Based on Self – Determination Theory (SDT) this research will investigate and compare relationship between motivation and autonomy of individual and team disability sport. The quantitative survey will be conducted among athletes with disabilities; questionnaire will include demographic questions (age,

gender, sport type, disability onset, etc.), to evaluate motivation will be used Sport Motivation Scale – II, to evaluate autonomy will be used The Autonomy – Supportive Coaching Questionnaire. Survey will be conducted among Korean athletes with disabilities, which compete in individual and team sports and train in Icheon training center of Korean Paralympic Committee and Gyeonggido Sport Association for the Disabled.

Keywords : Paralympic sport, motivation, autonomy, athletes with disabilities.

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Chapter 1. Introduction

1.1. Current context

Motivation is the desire to do something just for sake of its accomplishment or because it brings enjoyment by doing something. It propels athletes to train many hours and cover long distance, overcome one's pain and trauma on the way to fulfilling goals, influences on how person adhere to exercises and strive to success. At the same time, motivation can be facilitated or undermined by influence from outside such as expectation of reward or recognition, pressure or obligations, given to someone, such as parent's pressure on the child to do sport exercises. Athletes can feel amotivation, absence of intention to keep train and compete. Very often athlete trains hard and does exercises because of enjoyment of doing it and by expectation of reward or to avoid punishment at the end of the completion.

Perception of autonomy from the coach plays important role in athletes' motivation. Role of the coach and coach – athletes' relationship is very important in enhancing of athlete's motivation and performance results. Coach can foster in athletes inspiration and persistence, motivate to keep training and aspire to the victory. One of this way can be accomplished is by distributing authority in terms of autonomy support, which means showing interest in athletes' input and praising their autonomous behaviour (P. Vande

Pol, M. Kavussanu, & M. Kompier, 2015). Asking of athlete's opinion and his involvement in building of training process as well as praising of athlete's attitude and own decision-making and giving adequate feedback positively influences on motivation and performance.

So relationship between motivation and perceived autonomy can explain athletes behavior and persistence to train and compete. The understanding how and why athlete motivated or amotivated will help to build right strategy for facilitation of motivation by coach and athletes. Understanding of coach – athlete relationship nature, its differences based on sport types (team or individual) and athletes' autonomy support by coach will positively influence on enhancing of athletes performance.

1.2. Background

Previous researches revealed strong positive correlation between motivation and coach's autonomy support among able – bodied athletes (Adie, Duda, & Ntoumanis, 2012; Alvarez, Balaguer, Castillo, & Duda, 2009; D. Conroy & Coatsworth, 2007). Despite on similarities in coaching and motivation enhancing strategies of able – bodied and paralympic athletes, there are also differences, which are still need to be investigated. Therefore, there are still a need for empirically proven researches about relationship between motivation and autonomy of athletes with disabilities. For example,

during the training process of able –bodied athletes, coaches try to improve their technical skills and performance level as much as it possible, whereas coaches of athletes with disabilities match training programs to athletes' functional capability and ability level (H. R. Banack, C. M. Sabiston, & G. A. Bloom, 2011). In addition, coaches of athletes with disabilities often plays broader role in their life such as coaches have to concern about accessibility of training venues, transport and proper adaptive equipment. Mostly athletes with acquired disabilities needs more support in perception themselves and enhancing of self – confidence of close people such as family, friends and coaches, therefore social contacts, and relatedness can play important role rather than in case of their able – bodied counterparts.

Many previous researches showed differences between able – bodied and disabled athletes in terms of motivational behavior (Newstrom, 2015), reasons to participate in sport (Grzegorz et al., 2016), win orientation (Skordilis, Gavriilidis, Charitou, & Asonitou, 2003), competitiveness and autonomy perception (Hailey R. Banack, Catherine M. Sabiston, & Gordon A. Bloom, 2011). In addition, in addition, such factors as adaptive equipment, classification, venue accessibility and other paralympic sport specific factors also could make influence on athletes' motivation. Therefore, implications of previous researches about able – bodied athletes cannot be directly applied on

athletes with disabilities.

The perception of autonomy given by coach is different in team and individual sport types because of its nature. For example, in individual sport athlete rely only on himself or herself, focus on skills development and need to be concentrated during whole competition. In team sport, where all athletes pursuit team goal, as well as concentration and skills, atmosphere and support in team can be crucial. Sometimes, team sports do not require excellent skill development but require fulfilment of team goals. In addition, there are few researches, which investigate relationship between motivation and coaches' autonomy support of paralympic athletes based on the sport's type. For example, in team sport coach need to match training program for athletes with different disabilities and consider their functional abilities (e.g., wheelchair users and athletes with amputations). In addition, factors which are unique for paralympic sport such as such as adaptive equipment usage (wheelchair, ski outriggers), classification, disability onset, guide's help in case of blind athletes (Kokaridas, Perkos, Harbalis, & Koltsidas, 2009; McLoughlin, Weisman Fecske, Castaneda, Gwin, & Graber, 2017) can make influence on athletes performance level, motivation and autonomy perception (Cunningham, 2018). In addition, social interaction and social support makes stronger influence on desire to be involved in sport rather than in case of able

– bodied athletes. Involvement in sport lets escape from daily routine and looking to forget their troubles, it helps to enhance self – esteem and demonstrate autonomy by involving in physical activity. Another important outcome is avoiding social insolence through interaction with peers, support and appreciation giving by the coaches and family satisfies athletes’ need in social interaction and enhance their motivation to be involved in sport. (Swanson, Colwell, & Yushan, 2008).

1.3. Problem statement

The relationship between motivation and perceived autonomy of team and individual sport athletes with disabilities is not well investigated.

1.4. Purpose of the study

To exam relationship between motivation and perceived autonomy of individual and team sport athletes with disabilities.

To compare the level of motivation and perceived autonomy of individual and team sport athletes with disabilities.

1.5. Research questions

In order to accomplish the purpose of this study next question is required to be answered:

RQ1. How different is the level of motivation and perceived autonomy of individual and team sports athletes with disabilities?

1.6. Significance of study

The significance of the study is explained by the lack of researches on the topic presented in this study. The implications of the study could be useful for better understanding of psychological nature of athletes with disabilities considering sport's type and coach – athletes' relationships. In addition, results could be useful to coaches and athletes for further development and adjustment of training schedule.

Chapter 2. Literature review

2.1. Brief history of Paralympic sport

The academic interest to the sport for people with disabilities began in early 20th of last century as the result of World War I, where many soldiers were wounded, sport were used in rehabilitation purposes in military hospitals (Giovanis & Margari, 2015). However, real development of rehabilitation through sport began in 1944, when was open Spinal Injures Center at Stoke Mandeville hospital in England, led by Dr. Ludwig Guttmann. His approach was to use rehabilitation as a physical activity for soldiers with spinal injuries. Finally, in 1948, at the same date when London Olympic Games had started Dr. Guttmann organized first competition among wheelchair users, which named Stoke Mandeville Games. There were 16 participants competed in archery. In 1952, Stoke Mandeville Games became international because of joining wheelchair athletes from Netherlands. In 1960, Stoke Mandeville Games were held in Rome right after Olympic Games, officially became known as Paralympic Games, participants around 400 athletes from 23 countries were competing in different sport types, however adapted only for wheelchair athletes. At 1976 Toronto Summer Paralympic Games athletes with amputees and visual impairments were invited to compete, in 1980, athletes with cerebral palsy became eligible to compete at Paralympics

(Banack, 2009). First Winter Paralympic Games was presented in 1976 Örnköldsvik, Sweden, with 53 athletes from 16 countries, competing in para alpine skiing and nordic skiing and demonstration of ice sledge racing. In Innsbruck, Winter Paralympic Games were held twice: in 1984 and 1988. Athletes with amputees, visual impairments and with cerebral palsy became eligible to compete. Since Seoul 1988 Summer Paralympics, Paralympic Games considered as equal sport event as the Olympic Games, all competitions were organized at the same venues, which were used on Olympics. In 1989, International Paralympic Committee (IPC) replaced ICC as the independent from IOC organizations with its structure, goals and policies, which represents several disability sports as international federation. In 2006 games in Turin, Italy, 486 athletes from 39 countries competed in four sports, wheelchair curling made its debut on international event. First time games were webcasted in Internet on Paralympic Sport TV. At Beijing 2008 Summer Paralympic Games the large number of athletes – 3951 from 148 countries competed in 20 sports. This record was beaten by London 2012 Summer Paralympic Games with more than 4000 athletes from 168 countries competed in 20 sports types, games were broadcasted in more than 100 countries. In 2014, Winter Paralympic Games were held in Sochi, Russia, 550 athletes from 45 countries competed in five sport types, para snowboard made

its debut. At Rio de Janeiro 2016 Summer Paralympic the largest number of athletes – 4342 from 150 countries competed in 22 sport types, first time refugees team participated in Games as well as entire Russian team was banned due to doping scandal. Winter Paralympic Games 2018 in Pyeongchang with 559 athletes from 49 countries had shown importance of sport in peace building on Korean peninsula with participation of North Korean team to the event.

Going through historical observation, it is becomes obvious several things: first, sport types are developing from games to games. Second, athletes with wide range of disabilities became eligible to compete due to development of classification methods and procedures. Third, with development of sport and its difficulty, some athletes to get high results use doping and other cheating mechanism. Fourth, media coverage became important part of Paralympic Games.

2.2. Challenges in Paralympic Movement

2.2.1. Classification challenges

Classification – determination of athletes' eligibility to compete in sport and how athletes are grouped together. Classification should minimize the impact of impairments on sport performance and ensure that the success of athletes are based in his skills, physical preparation, endurance and tactical

ability (Busse, Enos, Davis, & Megginson, 2012; IPC, 2018). The main factor that determines sport class in a functional classification system is the extent to which an athlete's impairment influences on sport performance. As a result, athletes with lower limb paralysis, due to spinal cord injury could compete together with double above knee amputees in wheelchair races. Despite both athletes having very different impairments, their impairment equally impacts their ability to propel their wheelchair (IPC, 2018). Classification of athletes helps to promote participation in sport by the people with disabilities by controlling the impact of impairment on the outcome of competition (Tweedy, Beckman, & Connick). The main purpose of the classification is to minimize the impact of impairment of athletes and ensure that the success of athlete is determined by skills, power, endurance, tactical ability and mental focus (Busse, 2014). IPC recognizes next 10 impairment types that are makes athletes eligible to compete: impaired muscle power, impaired passive range of movement, limb deficiency, leg length difference, short stature, hypertonia, ataxia, athetosis, visual and intellectual impairment. Sport class is a category that groups athletes depending how much their disability impacts performance in their sport, so sport class is not necessarily comprised of one impairment type alone but can be comprised athletes with different disabilities (Busse, 2014). Currently, classification has 4 stages: first,

establishing athlete's health condition, second, determination of athlete's impairment eligibility, third, identification of athlete's impairment severity level to compete and fourth, determine which class the athlete should compete (Tweedy et al., 2014).

However, some athletes try to cheat classifiers and classification system in order to be classified in the class with more severe disability and therefore to get competitive advantage. For example, athletes can tire themselves or take cold shower to stiffen their muscles before examination (Guardian, 2017). Unfair class determination can undermine motivation to compete of those athletes, who compete in equal opportunities in appropriate classes. Another challenge is deliberately underperforming on test of impairment known as intentional misrepresentation, example could be test of strength or coordination, athletes with some specific impairments can manipulate with muscle strength by decreasing its permanent abuse to be selected in the class with higher severity and then increase it by intensive training, which also gives unfair advantage (Tweedy et al.) in order to be classified in class of athletes with more severe impairments.

At the same time unfair and wrong classification which can happen in case of preconceived classifier's decision or mistake can undermine and demotivate athlete to continue training and giving up of sport. The IPC

permanently works on enhancing of classification quality and qualification of classifiers however, several cases with inappropriate classifications already happened and raised questions about changing of classification methods.

2.2.2. Doping usage

Doping is another big issue in Paralympics. The first formal testing program at the Paralympic Summer Games was in Seoul in 1988 and in 1992 in Tignes-Albertville for the Paralympic Winter Games. Since then, doping control has been conducted at all Paralympic Summer and Winter Games. The rationale for doping control in sport is first, to protect the health of athletes from potential harmful side effects of prohibited substances; and second, to ensure fair and ethical competition by deterring and preventing athletes from cheating and having an unfair advantage over their competitors (IPC, 2016).

However, not all athletes follow these rules. First doping control was made in 1992 Barcelona Summer paralympics and five athletes were condemned in prohibited substances usage. In 2000, fourteen athletes had shown positive test results, ten among them were powerlifters. First doping rules violation at winter paralympics happened in Salt Lake City 2002, prohibited substance was found in German skier's blood. The most recent cases related to ban of entire Russian team to participate in Rio 2016 Summer Paralympic Games because of revealing government sponsored doping

program, which was reported in McLaren report (BBC, 2016) and ban from Pyeongchang 2018 Winter Paralympic Games, where ‘clean’ Russian athletes can compete as ‘neutral athletes’ under the flag of IPC (Times, 2018).

2.2.3. Media coverage

The media makes great influence in shaping society’s perception about disability and sport. Yet, there are some fixed stereotypes about paralympic games and athletes. Mostly, athletes with disabilities are less visible than their able-bodied counterparts, some media resources stated that paralympic games are not ‘real’ competition and paralympic athletes were not considered as ‘real elite athletes (Leanne Rees, Priscilla Robinson, & Nora Shields, 2017).

Female athletes receive less textual and photographic coverage, faced more discrimination than male athletes. In the research which investigated Spanish media coverage over the period of three Olympics (Atlanta 1996, Sydney 2000 and Athens 2004) was revealed that among 335 images only 207 were observing male athletes and only 60 were dedicated to female athletes, the remain were mixed photos (Pappous, Marcellini, & de Léséleuc, 2011). Also, female athletes mostly presented in media sources ‘infantilized’ through reference to their vulnerability, sensibility and fragility (de Léséleuc, Pappous, & Marcellini, 2010).

Athletes with amputees, wheelchair athletes are more covered

whereas athletes with visual impairments and cerebral palsy are not covered at all (L. Rees, P. Robinson, & N. Shields, 2017). Another challenge is that media often focus on athletes' disability rather than sport performance, mostly, athletes presented as people, who overcome their disability and daily struggling with obstacles in live rather than focusing on their performance results (Brittain, 2010).

2.2.4. Venues' accessibility and adaptive equipment

Competition and training facilities that are perceived to be “disability unfriendly” are a significant organizational stressor for para-athletes. Even where there may be elevators and ramps to enhance accessibility, these may not always be fit for purpose. For example, in the Paralympic village in Rio de Janeiro in 2016, athletes were accommodated in 17-storey tower blocks with just two elevators, which could only fit two wheelchairs at one time. Queues for lifts could be extensive at busy times, particularly when athletes were travelling to competition. Even if an athlete could physically use the stairs, having to walk down over ten flights of stairs is far from ideal competition preparation. Therefore, whilst the accommodation was theoretically accessible, in practice it was limited and caused additional pre-competition stress to the para-athletes (Cunningham, 2018).

Many individual respondents asserted that sports provision for people

with a disability in their local area was poor, a frequent criticism being the lack of information and publicity in relation to what is actually available. In relation to difficulties encountered with sports facilities, comments made included the lack of transport available; access into sports centers; changing and toilet areas being 'smelly and dark!', and a lack of deaf awareness. Concerning improvements to future sports provision, comments made again included the swimming pool water temperature at one sports center ('it is always cold') and the distance needed to travel to this center, benches which are too narrow in changing rooms ('can make putting socks and shoes on difficult') and the cost of sessions and their timing. Other suggestions included the need to have more student contacts and sports advisors for disabled people (French & Hainsworth, 2001).

To compete in disability sport, disability specific equipment is often required, such as racing wheelchairs, hand cycles, tandem bicycles and sport-specific prosthetic limbs, such as running blades. Alternatively, modifications are required to standard equipment for para-athletes to participate in their chosen sport. Such bespoke equipment is charged at a premium, particularly for elite para-athletes, where innovative technology is a necessity to be competitive against the best in the world. In research involving elite male wheelchair basketball players, the players cited lack of

finance for their sport specific wheelchairs as one of the most significant sources of stress (E. Campbell & Jones, 2002; Cunningham, 2018). In the research, which investigated motivational factors and coping strategies of Norwegian athletes with and without disabilities it was revealed that motivational and coping strategies of two groups have more similarities rather than differences in ego and task orientation. Athletes with disabilities have similar goal and win orientation during the competition as their able – bodied peers, although it was emphasized that success of athletes with disabilities depends also from external factors such as adaptive equipment such as wheelchair, prosthesis, etc. (Pensgaard, Roberts, & Ursin, 1999). In the qualitative research based on SDT of McLoughlin et al., (2017) were investigated facilitators and barriers that influence on sport participation of athletes with disabilities. Motivation, enjoyment from sport, increasing physical and mental health were stated as facilitators of sport participation, special emphasize was made on coaches' ability of empower athletes and on importance of family and peers support. As the barriers, athletes mentioned time management, because it is difficult to find balance between trainings, work, family and other personal commitments. Another barrier was related to the financial cost of adapted equipment, which is mostly custom made and consist of high – technological parts and therefore very expensive. The price

and availability of equipment can make major impact on motivation of athlete to keep train and on his or her involvement in sport activities. (Burkett, 2012; Towers, 2010b) noted that in the sporting arena adaptive devices and equipment can inhibit sport performance of athletes with disabilities because they push the limits going 'higher, faster and longer'. Assistive equipment is fundamental for paralympic athletes to participate and compete in winter or summer sport activities. Although there have been improvements in the mechanical function of some assistive equipment the key issue is matching of the person with assistive technology of the equipment. Equitable access to equipment will also ensure the fundamental spirit of fair play that underpins that paralympic games is maintained. (Towers, 2010b) stated that good and accessible facilities are fundamental to developing sports for all opportunities. The design and maintenance of sport facilities should to consider the needs of people with disabilities such as visual, cognitive and mobility impairments. Installations of wheelchair ramps, handrails, elevators, locker and toilet rooms and designated routes for people with visual impairments can facilitate athletes' interest to the sport and enhance socializing opportunities. Another important factor is qualified staff, which can help to athlete when it needs to move, communicate or use the venue facilities.

2.3. Team and individual sport

Coach's instructions and players' role are different in team and individual sports. Previous researches revealed differences in perception of coach autonomy between individual and team sports of able-bodied athletes (Amorose & Hollembeak, 2005; P. K. C. van de Pol, M. Kavussanu, & M. Kompier, 2015). Perceived autonomy of individual sport type's athletes can be higher rather than team sport athletes' perception. The reason is in the nature of sport type. In individual sport athletes get more individual oriented instructions and more involved in decision – making (e.g., which skills to develop or how to compete) which consequently lead to higher perceived autonomy. Athlete should rely only on himself, success in individual sport requires high level of self-discipline, focus and stress struggling ability. In team sports, athletes tend to perceive the leading role of the coach in decision making for the sake of team efficiency in general and instruction they receive may be more group – oriented. Thus, often in team, athletes with higher skills and abilities have to sacrifice them in order to accomplish team goals and that undermine their perceived autonomy, nevertheless athlete's talent, he must rely on teammates, tend to be more agreeable and more sociotropic rather than individual sport athletes (Kajbafnezhad, Ahadi, Heidarie, Askari, & Enayati, 2011). However, performance could increase from one –on – one competition to two –on – two competition because of team cooperation and relatedness

with teammates promotes better performance and rather than individual competition in sport (Tauer & Harackiewicz, 2004). Accordingly with that, team sport athletes comparing with individual sport athletes, show better cognitive performance, decision – making and relatedness, which are positively related with intrinsic motivation and increase enjoyment and efforts, which lead to the improvement in performance from individual to team competitions (Cooke, Kavussanu, McIntyre, & Ring, 2013).

(Hailey R. Banack et al., 2011) in their research based on SDT described correlation between coach autonomy supports and intrinsic motivation of athletes with disabilities. Researchers revealed that perceived coach autonomy was a predictor of intrinsic motivation to accomplish and to experience stimulation, by other words, when coaches support athletes in training and give them relatively high level of autonomy in training process athletes experienced high level of intrinsic motivation to accomplish and to experience stimulation. Special focus made on the role of coaches of athletes with disabilities, while they are required to fulfill the typical role of the coach, they also have to concern about the transportation, facilities acceptance and communication with athletes' support workers, all these factors naturally enhance the role of the coaches in daily life and motivation of athletes with disabilities.

Mageau and Vallerand suggested motivational models of coach – athlete relationships, which states that coaches autonomy supportive behavior which is depend from such factors like coaches’ personal orientation to coaching, coaching context, perception of their athletes skills have a beneficial impact on athletes’ satisfaction need of autonomy, which lead to satisfaction of intrinsic motivation (Mageau & Vallerand, 2003b). Giving a choice to athletes, asking for his feeling and perspectives, listening to his opinion as well as giving rationale for requested tasks and for limits and rules. Such rationale facilitates the internalization of the underlying reasons for activity engagement, meaningful task is easily accepted and integrated (Mageau & Vallerand, 2003b). As an example, coach interested in the athlete’s opinion about which skills athlete thinks are need to be trained and improved. Providing to athlete and opportunity for initiative taking and independent work and giving positive and non – controlling feedback for their attitude and for making their own decisions, as an example, coach positive feedback on decision which athlete has made during the match (P. K. C. van de Pol et al., 2015). Such approaches will positively influence on personal perception of autonomy and competence and enhance intrinsic motivation to keep training and be engaged in sport whereas using controlling and commanding approach will negatively influence on athletes’ perception of

autonomy and diminish intrinsic motivation.

2.4. Self – Determination Theory

Many researches dedicated to the disability sport over last thirty years. The father of modern Paralympic movement L. Guttman stated that sport participation improves self –confidence and self – esteem of athletes with disabilities as well as propels integration to the society (Guttman, 1976). The Committee on Sport for Disabled (COSD) of United States Olympic Committee (USOC) identified seven areas for further researches on sport for disabled; one of the priority focus is sociological and physiological aspects of the sport. Special focus is given to necessity of further researches dedicated to intrinsic motivation for sport participation and to effect of sport participation upon intrinsic motivation (DePauw, 1986). One of the theories, which proves its reliability and validity in the field of researches dedicated to motivation is Self – Determination Theory (SDT), which describes correlation between athletes motivation and their performance result and adherence to trainings (R. M. Ryan & Deci, 2000). According to SDT, human behavior is built upon three innate psychological needs: autonomy, competence, and relatedness.

Autonomy is an individual judgment about level of being in charge of one's activities or action, choice and way how to develop. Research

conducted by Amorose & Horn (Amorose & Horn, 2001) revealed that in case if athletes perceived high level of coach's autonomy support were more intrinsically motivated to perform better and persistent rather, whereas athletes, who perceived that their coaches were ignorant or high controlling showed low degree of intrinsic motivation. As much as coaches provide choice within specific rules and limits, provide rationale for tasks and limits, acknowledge athletes' feelings and perspectives, provides athletes with opportunity for initiative taking and independent work and provide non – controlling competence feedback athletes' perception of autonomy get strong and motivated (Mageau & Vallerand, 2003a).

Competence is an individual judgment about his or her ability in a particular area and desire to know how and do something in proper way and accomplish it with outcome (Frederick-Recascino & Schuster-Smith, 2003; Newstrom, 2015; R. M. Ryan & Deci, 2000). Allen & Howe (Allen & Howe, 1998) in their research which investigated athletes' perceived competence stressed that higher perception of self – competence get higher after coaches' positive feedback and get lower after frequent encouragement and corrective information about mistakes. They also noted that athletes who are better in specific sport type are likely to perform better and be successful more frequently and this success should lead athletes to view themselves as more

competent.

In the qualitative research, investigates motivation to sport participation among paralympic athletes it was stated that one of the most frequent reason for participation in wheelchair basketball were opportunities to exercise and improve sport competence (Molik et al., 2010). Opportunities to gain recognition and emotions related to the physical activity, teamwork, possibility to develop sport skills and chance to exercise are the most reasons driving the athletes with disabilities to participate in sport.

Ryan and Deci (2000) emphasize that the feeling of relatedness is important in socialization of person. Social environment can facilitate or forestall intrinsic motivation by supporting versus thwarting sense of relatedness. (Wu & Williams, 2001) found out in their research that socializing and connectedness to others were pointed put as important reason for continuing participation in wheelchair basketball, rugby, tennis and athletics.

Different motivation types are either facilitate or undermine the level of satisfaction in feeling of perceived autonomy, competence and relatedness. According to SDT motivation can be intrinsic, extrinsic and amotivation. Intrinsic motivation is an inherent tendency of the human nature to seek out novelty and challenges, to extend and exercise one's capacities, to explore,

learn and get enjoyment from doing some activities (R. M. Ryan & Deci, 2000). Extrinsic motivation is an engaging in activity by the external factors such as reward or recognition, social pressure or obligations such as given word to parents or friends (Newstrom, 2015). Amotivation is the state of lacking the intention to do act, doing something without caring about the task or without the interest to the outcome of activity. When athletes in this stage, they no longer identify any good reason for why they continue to train (Pelletier & Tuson, 1995).

Researchers identified three types of intrinsic motivation: intrinsic motivation to know is a desire to explore, curiosity, experience while learning, exploring or trying to understand something. As an example, athlete exploring new techniques and feels satisfaction from experience of learning something new (Deci, Vallerand, Pelletier, & Ryan, 1991; Fortier, Vallerand, & Guay, 1995; Pelletier & Tuson, 1995)

Intrinsic motivation to accomplish is an engaging in activity for the pleasure and satisfaction experienced when one attempts to accomplish or create something. Trying to master certain difficult training techniques in order to experience personal satisfaction represents an example of intrinsic motivation toward accomplishment (Pelletier & Tuson, 1995).

Intrinsic motivation to experience stimulation is operative when

someone engages in activity in order to experience stimulating sensation, for example, sensory pleasure, fun, excitement. For example, athletes, who participate in their sport in order to live exiting experience. (Fortier et al., 1995)

Intrinsic motivation influences people to engage in sport without any external influence or pressure, but because of enjoyment from doing it, as well as without expecting any reward or recognition from participation to sport. Positive level of autonomy, competence and relatedness creates favorable circumstances for fostering intrinsic motivation. Intrinsic motivation cultivates in individual aspiration to persistence, adherence to exercises and self-development. SDT argues that athletes with high level of intrinsic motivation usually achieve higher results in competition and have strong adherence to exercises rather than athletes with mostly extrinsic motivations (R. M. Ryan & Deci, 2000). As example, the feeling of autonomy and competence motivates para nordic skiers cover long distances and train many hours despite on weather and without expecting any reward and because of pure enjoyment by activity and without any pressure to participate.

However, not all activities are engaged only by intrinsic motivation. When activity is not chosen or externally imposed, they are said to be extrinsically motivated (Frederick-Recascino & Schuster-Smith, 2003).

Behavior, which is motivated by external factors results in feeling of low level of autonomy and competence for the activity, person doesn't have inner intention or personal concernment to successfully fulfillment of the task and not interested in result, action is motivated by expecting of reward such as money or not to be punished (Vallerand, 2000). Other example of extrinsic motivated action is activity made by feeling as if someone must to do it, the feeling of guilty or anxiety if action will not be completed (R. M. Ryan & Deci, 2000). The level of relative autonomy and competence can be vary depend to the intention and expected result. Relatively high autonomy and competence can be reached when person understand importance of internalization of externally motivated activity, for example, athlete's strong self – commitment toward the adherence to difficult exercise, motivated by realizing of its importance in getting high results in performance. It also has externally motivated nature with athletes, whose adherence is controlled by the coach, but has different level of autonomy.

Researchers identified four types of extrinsic motivation (Pelletier, Rocchi, Vallerand, Deci, & Ryan, 2013). External regulation, defined as behavior motivated by external reward such as praise, money or by pressure from coach or parents. In this case, sport is performed not by fun but to obtain rewards or to avoid negative consequences.

Introjected regulation is a feeling of someone to do an action as if he or she must to do, under the pressure of inner sense of guilty or anxiety (Massi, 2005). Athletes who participate in sport because they feel pressure to be in the good shape and feel embarrassed when they are not in their best form.

Identified regulation is a behavior when athlete realize importance of outcome for personally him and therefore performs it out of choice. As an example, athlete who does and loves the sport he performs and therefore trains hard every day, however, his action is also stimulated by the reward in case of winning.

Integrated regulation is the most autonomous form and occurs when behavior is not only valued but also consistent with one's lifelong goals, objectives and needs (Pelletier et al., 2013) which still considered as extrinsically motivated.

Ryan and Deci (2000) states that creation of conditions that supports autonomy, competence and relatedness facilitate one's intention to self – development as well as high level of engaging in activity and enjoyment by it. On other side, externally controlled behavior and disinterest in accomplishment of one's action hinder and diminish sense autonomy competence and relatedness therefore one's motivation in fulfillment of activity.

In last decades, researches revealed the correlation between intrinsic motivation and adherence to exercises between participants of aerobics classes and taekwondo classes. The participants of taekwondo classes were higher in level of enjoyment and competence motives and lower in body appearance motives rather than aerobics. They also showed higher level of adherence to exercises rather than aerobics classes participants. It was revealed that adherence is highly related to intrinsic enjoyment by the sport and opportunity if social integration and lowly related to the body-related motives such as fitness and appearance (R. M. Ryan & Deci, 2000; Richard M. Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997).

Frederick – Recascino and Schuster – Smith (2003) compared in their research the competition and intrinsic motivation level in physical activity in two groups (bicycle cyclists and fitness exercisers). Results showed that competitiveness and participation motivation of cyclists were highly correlated with enjoyment and adherence level whereas competitiveness level of fitness exercisers was positively correlated with body-related motives while showing no relationship with adherence. In discussion, it was stated that high level of competitiveness of cyclist was explained by their strong intrinsic motivation and enjoyment of cycling and low extrinsic motives, correlated with body appearance, which is consistent with premises of Self–

Determination Theory, whereas fitness exercisers group showed similar level of competitiveness but higher level of appearance motivations than cyclist group. That correlates with statement that body appearance is positively related to extrinsic motivation.

The importance of enjoyment and fun in fostering intrinsic motivation to self-determination and an opportunity to improve abilities in sport was reflected in research made by (Prokopowicz et al., 2016) they compared motives for participation in team sport such as Paralympic sailing of Polish and European athletes. They revealed that interaction with other people and excitement of opportunity to improve self-abilities are the main aspects motivating disabled athletes to participate in sailing.

Skordilis (2003) revealed in his study that wheelchair basketball players and amateur athletes have similar competitiveness and goal orientation level, orientation to teamwork was higher, whereas professional able – bodied basketball players have higher win orientation, explained by the importance of income and pressure of audience, which is depend to their success in basketball and therefore more extrinsically motivated.

Newstrom (2015) in the research based on the comparison of competitive and performance motivation of athletes with (paralympic fencing) and without disabilities investigated existence of differences and similarities

in competitive and performance motivation between two groups. Researcher revealed higher level of enjoyment and competence and therefore higher intrinsic motivation of athletes with disabilities rather than their able-bodied peers and emphasized the importance of coach support and understanding of different motivational attributes. The limitation of the study is that athletes with disabilities were recruited only from individual sport; there were no team sport athletes who could have different perception of coach support and interaction with peers. However, previous studies (Gillet & Rosnet, 2008) revealed differences in autonomy perception of team and individual sport athletes, individual sport athletes felt more in control of the way they train and therefore more autonomous rather than team sport athletes.

(P. G. Campbell, MacAuley, McCrum, & Evans, 2001) in their research, which investigated motivation and exercise differences based on the ages (n=1600) revealed that variable 'to have fun', one of factors, which enhance intrinsic motivation (Ryan & Deci, 2000) which measures importance of personal goal was significantly different between youths (4th place) and adults (11th place). Egli et al., (2011) revealed significant differences between ages in motivation. It was found that students younger than 20 years more motivated to physical activities by health related issues, which is considered as extrinsic motivation, it lets them to stay socially

engaged with friends due to busy education schedule, whereas students over 20 years were mostly influenced by intrinsic motivation factors. Different role sport plays for social interaction of people with disabilities. First, sport helps to be involved in social relations with others and achieve greater social acceptance because in many cases their interaction opportunities are limited by venue, transport and environment inaccessibility. In addition, social interaction and demonstration of autonomy in by involving in physical activity helps to overcome stereotypes about disability and perception that people with disabilities cannot take care themselves.

Motivation and coach autonomy support plays important role on determination of individual and team sport athletes with disabilities behavior. Perception of coach autonomy support is different in case of individual and team sport and plays important role in motivation of athletes and adherence to train. Researches revealed that intrinsic and extrinsic motivation of athletes with and without disabilities have similarities, differences, both groups of athletes being intrinsically motivated had shown higher performance results, social, and coach support was significant in terms of athletes with disabilities. Involvement in sport activities is important as a tool of social interaction for athletes with disabilities. Individual sport athletes tend to be more autonomous in decision – making how to train and compete; team sport

athletes mostly put team's goals higher rather than personal and therefore less autonomous. However, researches made with able – bodied athletes cannot be directly applied for athletes with disabilities, on their motivation and autonomy perception make influence factors such as role of sport in socializing of athletes, classification, disability itself, venue accessibility.

2.6. Hypothesis

Based on implications of previous researches, next hypothesis will be suggested in the research:

Motivation will depend from the level of perceived autonomy in case of both team and individual sport athletes.

Individual sport athletes will show higher correlation between perceived autonomy and motivation rather than team sport athletes.

Chapter 3. Methodology.

3.1. Participants

Participants were 179 elite Korean athletes with disabilities, 121 individual sport (archery, table tennis, fencing, judo, powerlifting,) and 58 team (wheelchair basketball, sitting volleyball) sport athletes who train in Incheon Paralympic training center of Korean Paralympic Center and in sport facilities of Gyeonggido Sport Association for the Disabled. 20 athletes were excluded from analysis due to missing of data. The recruitment procedure was as follows: first, we obtained approval from KPC to conduct survey. Then, KPC Research department revised survey questionnaires and its proper translation to Korean. Furthermore, we obtained participants' consents, shared hard copies, and collected data. All participants had no problems with regard to understanding the instructions and completing the questionnaire. Of the 179 participants, 79.6% (n = 144) were male and 20.4% (n = 35) were female. Furthermore, 64.6% (n = 121) were individual sport players and 40.4% (n = 58) sport team athletes. Most of the athletes had amputation 31.8%, n = 57, after athletes with spinal cord injury 26.6% n = 48, polio 11.2%, n=20, visual impairment 7.8%, n=14 and other disabilities 22.3%, n=40. Lastly, 78.3% (n=137) were athletes with acquired disabilities and 20.4% (n=36) with congenital disabilities (Table 1).

Table 1. Demographic Characteristics of Participants

Characteristic		Frequency (n)	Percent (%)
Gender	Male	144	79.6
	Female	35	20.4
Sport type	Team	58	40.4
	Individual	121	59.6
Types of disability	Spinal cord injury	48	26.8
	Amputation	57	31.8
	Polio	20	11.2
	Visual impairment	14	7.8
	Other	40	22.3
Origin of disability	Acquired disability	137	78.3
	Congenital disability	36	21.7

3.2. Instruments

Data were gathered using a questionnaire battery comprising a total of 39 items, as follows: a demographic characteristic questionnaire (12 items),

the Autonomy Supportive Coaching Questionnaire (ASCQ; 9 items) and the Sport Motivation Scale-II (SMS-II; 18 items). Last two scales were assessed based on a seven-point Likert scale ranging from 1 (not true at all) to 7 (very true). All scales were self-reports and no one had problems completing the questionnaires by themselves.

To evaluate motivation was Sport Motivational Scale – II (SMS – II) inventory, which had proved its validity and reliability in previous researches (Li, Kawabata, & Zhang, 2018; Moreira, Nascimento Junior, Vinícius Mizoguchi, Oliveira, & Vieira, 2016; Pelletier et al., 2013; Rottensteiner, Tolvanen, Laakso, & Kontinen, 2015; Stenling, Lindwall, & Hassmén, 2015) with Cronbach's alpha reliability value of 0.70 – 0.88 (Pelletier et al., 2013). SMS – II consist of 18 items divided under six variables, three item per each variable: intrinsic motivation, external regulation, introjected regulation, identified regulation, integrated regulation and amotivation. Participants were asked to respond to all the items on 7 point Likert scale ranging from 1 (not true at all) to 7 (very true).

SMS – II was developed from Sport Motivational Scale (SMS), firstly presented in 1995 by Pelletier (Pelletier & Tuson, 1995). SMS is a multidimensional and contextual measure of intrinsic motivation, extrinsic motivation and amotivation toward the sport. The SMS contains seven

subscales that measure three types of intrinsic motivation (to know, to accomplish things, to experience stimulation), three types of regulation for extrinsic motivation (identified, introjected, external), and amotivation. Each subscale contains four items, amounting to 28 items in total (Clancy, Herring, & Campbell, 2017), but doesn't have integrated regulation subscale. Later, after criticism toward incompetence of the inventory, revised form of SMS was suggested, which unifies subscales of intrinsic motivation in one subscale and adds integrated regulation subscale and named as SMS – 6, because it has six subscales under one regulation (Mallett, Kawabata, Newcombe, Otero-Forero, & Jackson, 2007), which also proved its validity (Blecharz, Horodyska, Zarychta, Adamiec, & Luszczynska, 2015). Finally, (Pelletier et al., 2013) suggested SMS – II, revised form of SMS, which address some limitations of previous version (Clancy et al., 2017), as well as unifies of intrinsic motivation in one subscale and adds integrated regulation subscale. In general, the SMS – II is presented as a recommended alternative to SMS, as it is more theoretically aligned in its item content, performs as well or better than previous scale, and it overall briefer, has 18 items instead of 28 items in SMS and more efficient to administer (Pelletier et al., 2013).

The Autonomy – Supportive Coaching Questionnaire (ASCQ) was used to evaluate perceived autonomy of the athletes. It has two subscale such

as interest in athletes' input, which evaluates athletes perception of how their coach listen for opinion and give choice to them and praising of autonomous behaviour, which evaluates level of encouragement, given by the coaches for autonomous behaviour (P. K. C. van de Pol et al., 2015). It showed its validity and reliability in previous researches (D. E. Conroy & Douglas Coatsworth, 2007; P. K. C. van de Pol et al., 2015). The Cronbach's alpha reliability value of the ASCQ had shown 0.90 for interest in athletes' input and 0.89 for autonomous behaviour subscales.

3.3. Statistical Analysis

Data were analysed using IBM SPSS Statistics version 23. Eight participants were excluded because of missing values, resulting in a total sample of 167 participants for analysis. First, all athletes were divided by sport type on individual and team. Descriptive statistics were used to describe the distribution of the variables and verify their normality separately for individual and team sport athletes. These data were expressed as means, SD, range, skewness and kurtosis (Table 2, 3). Then bivariate correlation analysis between sub-variables of motivation and coach autonomy support was conducted separately for individual and team sport athletes (Table 4, 5). According to the SDT, level of motivation is directly dependent to the level of autonomy given to the person (R. M. Ryan & Deci, 2000). Therefore, to

test the hypothesis of the study, linear regression model was tested, with motivation as a dependent variable and perceived autonomy as independent variable.

3.4. Results

3.4.1 Descriptive Statistics

The means, standard deviations (SD), skewness, and kurtosis for all of the variables are presented in Table 2 and 3. Individual sport athletes motivation mean 47.95 (SD=9.74) was higher rather than team sport athletes with mean 44.79 (SD=2.96) Both athletes groups showed high mean in perceived autonomy 49.47 (9.97) and 49.72 (6.90) respectively. Both groups showed almost same level of amotivation -39.57 (SD=9.80) and 39.52 (SD=9.07) respectively. Finally, individual sport athletes showed higher level of extrinsic motivation rather their peers from team sports 9.04 (SD=1.04) and 4.18 (SD=1.40) respectively (Table 2, 3).

Table 2. Descriptive Statistics for Variables (Individual)

Variables	Sub-variables	M (SD)	Skewness	Kurtosis
Motivation	Intrinsic	47.95 (9.74)	-0.136	-0.744
	Extrinsic	9.04 (1.03)	0.033	-0.255
	Amotivation	-39.57 (9.80)	-0.323	-0.534
Perceived autonomy		49.47 (9.97)	-0.082	-1.396

Table 3. Descriptive Statistics for Variables (Team)

Variables	Sub-variables	M (SD)	Skewness	Kurtosis
Motivation	Intrinsic	44.79 (8.12)	-0.56	0.574
	Extrinsic	4.18 (1.40)	0.07	0.548
	Amotivation	-39.52 (9.07)	-0.179	-0.051
Perceived autonomy		49.72 (6.90)	0.002	-0.818

3.4.2. Correlations between sub – variables of SMS-II and ACSQ

Pearson’s correlations were calculated to determine correlation between SMS-II and ACSQ separately for individual and team sport athletes, as shown in Table 4 and 5. In case of individual sport athletes there were strong linear relationship between intrinsic motivation and extrinsic ($r=.615$, $p<0.01$), autonomy support by coach ($r=.529$, $p<0.01$), negative correlation

with amotivation ($r=-.274$, $p<0.01$). Autonomy support by coach had correlation with extrinsic motivation ($r=.155$, $p<0.01$) and negative correlation with amotivation ($r=-.249$, $p<0.01$).

In case of team sport athletes, there were correlations between intrinsic and extrinsic motivation ($r=.575$, $p<0.01$) and negative with amotivation ($r=-.298$, $p<0.01$). In addition correlation were between autonomy support by coach and extrinsic motivation ($r=.855$, $p<0.05$) and negative with desire to change sport ($r=-.267$, $p<0.05$).

Table 4. Correlations between sub-variables of motivation and coach autonomy support. Individual sport athletes

	1	2	3	4	5	6	7
1	1						
2	0.615**	1					
3	-0.274**	0.743	1				
4	0.529**	0.155**	-0.249**	1			
5	0.025	0.408	-0.259**	0.455	1		
6	0.08	-0.104	-0.122	0.244	0.478	1	
7	0.465	0.543	-0.602	0.286	0.259	0.527*	1

Note. 1 = Intrinsic; 2 Extrinsic; 3 = Amotivation; 4 = Autonomy support by coach 5=desire to change sport; 6=satisfaction by facility; 7= satisfaction by equipment

*= $p<0.05$

** = $p<0.01$

Table 5. Correlations between sub-variables of motivation and coach autonomy support. Team sport athletes

	1	2	3	4	5	6	7
1	1						
2	0.575**	1					
3	-0.298**	0.267	1				
4	0.911	0.855**	-0.299	1			
5	0.345	0.107	-0.454	-0.267*	1		
6	0.082	0.174	-0.126	0.294	0.296	1	
7	0.628	0.558	-0.459	-0.019	0.043	0.469**	1

Note. 1 = Intrinsic; 2 Extrinsic; 3 = Amotivation; 4 = Autonomy support by coach 5=desire to change sport; 6=satisfaction by facility; 7= satisfaction by equipment

*= $p < 0.05$

** = $p < 0.01$

3.4.3. Linear Regression Analysis

According to the SDT, the level of autonomy given to the person can either enhance or undermine the level of motivation (R. M. Ryan & Deci, 2000). Therefore, in this analysis, motivation was dependent variable and autonomy support by coach was independent. Before conducting the regression analysis, normality and independence of data distribution were tested and after regression analysis homoscedasticity of residuals were checked, separately for individual and team sport athletes. To test independence was used a Shapiro –Wilk’s test ($p > 0.5$) (Liang, Tang, & Chan, 2009; Shapiro & Wilk, 1965). In addition, visual inspection of their

histograms, normal q-q plots and box plots showed that scores were approximately normally distributed both for individual and team sport types. For individual sport type the Shapiro – Wilk’s test showed $p > 0.621$ with a skewness of .001 (SE=.220) and kurtosis of -.155 (SE=.437).

For team sport type the Shapiro – Wilk’s test showed $p > .051$ with skewness of .260 (SE=.316) and kurtosis of -.969 (SE=.623).

The results of the linear regression analysis are presented in Tables 6 and 7 separately for individual and team sports respectively. In case of individual sport athletes there were significant relationship ($p < 0.001$) between motivation and autonomy given by coach with relationship coefficient $\beta = .309$ and the $R^2 = 0.68$ (Table 6)

Table 6. Linear Regression of Motivation and Coach Autonomy support.

Individual sport athletes

Variable	B	SE	β	t	Sig	R square
Perceived autonomy	0.643	0.181	0.309	3.545	0.01	0.68

In the case of team sport there was no significant relationship between autonomy given by coach and motivation $p = .823$ (Table 7)

Table 7. Linear Regression of Motivation and Coach Autonomy support.

Team sport athletes

Variables	B	SE	β	t	Sig.	R square
Autonomy support by coach	0.079	0.351	0.03	0.225	0.823	0.01

After computing the regression's results was checked homoscedasticity of the residuals. Normal p -p plot of regression showed dispersion of the variances approximately along with the line with some deviations in both cases. Scatterplot showed approximately rectangle data dispersion without outliers within the range for both individual and team sport types proved homoscedastic data dispersion.

Chapter 4. Discussion.

4.1. Findings

The purposes of the study were to examine relationship between motivation and perceived autonomy of individual and team sport athletes with disabilities. Research question was how different is motivation and perceived autonomy of individual and team sports athletes with disabilities. Findings of the research showed that there is significant difference in relationship between motivation and perceived autonomy of above two sport groups. Results of the study do not mean that team sport athletes tend to be less motivated or have less autonomy compare to their peers from individual sport types. There are many other factors, except autonomy, may influence on motivation of athletes such as win orientation, competitiveness (Skordilis et al., 2003), coping strategies (Pensgaard et al., 1999), etc. However, findings of current study with particular population sample showed that individual athletes showed higher dependence of motivation from perceived autonomy rather than team athletes.

Hypothesis I, which states that motivation will depend from the level of perceived autonomy, given by coach in case of both team and individual sport athletes was partially supported by the research results. In the case of individual sport athletes there were strong relationship between motivation

and autonomy ($\beta = .39, p < 0.01$). Perceived autonomy, given by the coach was predictor of both motivation types. In addition, there were strong linear correlation between both intrinsic ($r = .529$), extrinsic ($r = .155$), negative correlation of amotivation ($r = -.249$) and autonomy, which supports results of previous researches (Hailey R. Banack et al., 2011; Newstrom, 2015; P. K. C. van de Pol et al., 2015). According to the SDT theory, autonomy (with competence and relatedness) is necessary component to enhance motivation and level of autonomy perception directly influence on enhancing or undermining of motivation (R. M. Ryan & Deci, 2000). However, in the case of team sport athletes, autonomy was not significant predictor of motivation ($\beta = 0.03, p < 0.823$), despite of correlation between perceived autonomy and extrinsic motivation ($r = 0.855$). However, there were no correlation between autonomy and intrinsic motivation and amotivation but was negative correlation with desire to change sport ($r = -0.267$). The possible explanation could be that individual sport athletes perceived greater level of autonomy given by the coach rather than team sport athletes because they might have higher decision – making level and personal responsibility for results during the training and competition. Whereas team sport athletes may concede more decision –making power to the coach for the sake of team efficiency and may focus on the own role in team success despite on personal ambitions, which

could undermine level of autonomy, which eventually influences on intrinsic motivation level (Hollembek & Amorose, 2005). In addition, instruction given by the coach may be individual oriented in case of individual sport types and group oriented in case of team sports, hence coaches and individual sport athletes have more opportunities to interact with each other which can facilitate autonomy support and enhance intrinsic motivation. Therefore, in order to enhance intrinsic motivation of team sport athletes' coaches may focus on more autonomy supportive coaching and praising autonomous behaviour of each athlete (Mageau & Vallerand, 2003a).

Hypothesis II, which states that individual sport athletes will show higher correlation between perceived autonomy and motivation rather than team sport athletes, partially supported by the research results. Individual sport athletes showed higher correlation between intrinsic motivation and perceived autonomy. Findings could be explained by results of previous researches, which showed that individual sport athletes tend to be more self-determined compare with team sport athletes. One of the possible explanation could be that perceived autonomy, given by coach of individual sport type's athletes can be higher rather than team sport athletes' perception (Amorose & Horn, 2001). The reason is in the nature of sport type. In individual sport athletes get more individual oriented instructions and more involved in

decision – making (e.g., which skills to develop or how to compete) which consequently lead to higher perceived autonomy. Athlete should rely only on himself, success in individual sport requires high level of self-discipline, focus and stress struggling ability. In team sports, athletes tend to perceive the leading role of the coach in decision making for the sake of team efficiency in general and instruction they receive may be more group – oriented (P. Van de Pol et al., 2015; P. K. C. van de Pol et al., 2015). Thus, often in team, athletes with higher skills and abilities have to sacrifice them in order to accomplish team goals and become more extrinsically motivated and that could undermine their perceived autonomy, nevertheless athlete’s talent, he must rely on teammates, tend to be more agreeable and more sociotropic rather than individual sport athletes (Kajbafnezhad et al., 2011).

Study findings do not mean that team sport athletes have less autonomy perception compare to individual sport athletes. Autonomy perception mean 49.72 (SD=6.90) of team sport athletes was a little bit higher than mean of individual athletes 49.47 (SD=7.97). Contrary to the hypothesis and several previous researches (Newstrom, 2015; Pensgaard et al., 1999; Skordilis et al., 2003), there was high correlation between autonomy and extrinsic motivation. Athletes’ autonomy could increase from one –on – one competition to team competition because of team cooperation and relatedness

with teammates promotes better performance rather than individual competition in sport (Tauer & Harackiewicz, 2004). Accordingly to that, team sport athletes comparing with individual sport athletes, show better cognitive performance, decision – making, which are positively related with intrinsic motivation and increase enjoyment and efforts, which lead to the improvement in performance from individual to team competitions (Cooke et al., 2013). In addition, autonomy supportive feedback given to team and less autocratic coach’s behavior can enhance overall team members’ autonomy perception and intrinsic motivation (P. Van de Pol et al., 2015). Polish paralympic sailors showed high motivation from interaction with other people and through it, improving abilities in sailing (Grzegorz et al., 2016). In other study, softball players showed motivation to play because of relationship with their teammates (social interaction enhances extrinsic motivation) and the positive feedback from coach (autonomy), which enhanced their enjoyment from participation to the sport (Megan & Melissa, 2015). In team sports, athletes tend to perceive the leading role of the coach in decision making for the sake of team efficiency in general and instruction they receive may be more group – oriented. Thus, often in team, athletes tend to pursue team goals, have closer relationships with teammates, consider their abilities and understand each other faster and better during the competition and therefore

be more extrinsically motivated (H. R. Banack et al., 2011).

Assumptions that paralympic sport specificity such as adaptive equipment usage and accessibility of training facilities, will influence on motivation of athletes was not supported. Despite on the statements that adaptive equipment plays one of the major role in motivation of athlete to do sport (Cunnungham, 2018; French & Hainsworth, 2001) and importance of venue accessibility (Towers, 2010a) both team and individual sport athletes did not show any significant correlations between motivation and adaptive equipment quality and accessibility of the venue. Descriptive analysis showed mean 4.28 (SE=1.74) for equipment satisfaction and 4.69 (SE=1.63) for accessibility satisfaction in case of individual sport and 5.10 (1.68) and 5.09 (1.69) for team sport athletes respectively. Possible explanation could be that Korean athletes with disabilities have relatively good access to sport venues, such as KPC's Icheon paralympic training center, which has high accessibility level for people with disabilities and fully equipped with sport and performance equipment. In addition, during conducting the survey, it was visually noticed that athletes, who trained there had full access to the adaptive equipment, which needs to participate in sport. These statements were indirectly confirmed by the results of Korean athletes' performance on last Summer Asian Paralympic Games 2018 in Jakarta, where team Korea took

2nd place in overall medal ranking and first medals in para nordic skiing and para ice hockey during home winter paralympic games in Pyeongchang 2018.

4.2. Limitations

This research has several limitations. First, small sample size of team sport athletes, n=58 and only two team sport athletes such as wheelchair basketball and sitting volleyball participated in survey whereas individual sport athletes quantity were double time more, n=121, who represented 10 individual sport types so there is possible lack of sport types which can represent team sport.

Second, only male athletes presented team sport, whereas both male and female athletes presented individual sport. It happened because of again low variety of team sport participated in study and existence only of male teams in sitting volleyball and wheelchair basketball. Previous researches showed mixed results in gender differenced in motivation. Several researches showed significant difference between genders in motivation and its relationship with appearance (Frederick & Ryan, 1970) motivation and amotivation (Vallerand et al., 1993) motivation an orientation to win (Kokaridas et al., 2009) of athletes with disabilities. On other hand, several research findings did not reveal gender differences in motivation or its relationship with autonomy or coach – athlete’s relationships (Hailey R.

Banack et al., 2011; Newstrom, 2015; Pensgaard et al., 1999).

4.3. Conclusion

This study revealed the significant difference in relationship of motivation and perceived autonomy given by coach, between individual and team sport athletes with disabilities. The findings of the study partially supported SDT and importance of autonomy to enhance the motivation of individual athletes. However, contrary to SDT, team sport athletes did not show significant relationship between autonomy and motivation. Many previous researches found out that athletes who showed high score in intrinsic motivation tend to be more motivated in general and showed better performance and adherence to the trainings (Kokaridas et al., 2009; Newstrom, 2015; Pensgaard et al., 1999). Since autonomy tend to foster more intrinsic motivation rather than extrinsic (R. M. Ryan & Deci, 2000) future researches could focus on the question how to foster intrinsic motivation of team sport athletes with disabilities. The implications of the study could be useful for coaches to understand importance of praising of autonomous behavior in order to enhance motivation, considering differences of individual and team sport types' nature. Considering different motivation types such as intrinsic and extrinsic, coaches could find proper balance between them and autonomy, which eventually will positively influence on motivation and lead

to athletes' performance improvement. Disability sport, in comparison with able-bodied sport has its own characteristics such as adaptive equipment, classification, facilities' accessibility that could also effect on the athletes' motivation to do sport. In addition, social environment and cultural influence could make influence on athletes' motivation and performance, future researches could focus in investigation of influence of above factors on motivation of athletes with disabilities.

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Appendix A

장애인스포츠선수의 인식조사

귀하께서 응답하신 내용은 “통계법 제 13 조(비밀의 보호 등)”에 의거하여 본 연구 외에는 절대로 사용하지 않으며, 개인 신상에 관한 자료들이 노출되지 않도록 비밀을 유지할 것입니다. 바쁘신 와중에 본 조사에 참여해 주셔서 감사합니다.

연구자 Batyr Kadyrbaiuly(서울대학교)

제 1 호 설문조사.

본 정보는 연구 활동에 활용할 것에 동의함. 체크 (V)

1. 귀하의 나이: _____
 2. 귀하의 종목: _____
 3. 성별: ① 남 ② 여
 4. 자신의 종목에서 스포츠 등급: _____
 5. 만약 기회가 된다면 현재 스포츠 종목에서 다른 스포츠 종목으로 변경할 의사가 어느 정도입니까?
(1 - 전혀 변경하고 싶지 않다 7 매우 변경하고 싶다)
1 2 3 4 5 6 7
 6. 주당 운동시간: 하루 _____ 시간, 주 _____ 회
 7. 운동경력: _____ 년
 8. 대표경력: _____ 년
 9. 귀하의 장애유형: ① 척수 ② 경추 ③ 소아마비 ④ 절단 ⑤ 기타: _____
 10. 장애발병: ① 선천적 ② 후천적
 11. 보통 연습하시는 지체 장애인 전용 스포츠 시설 접근성에 대한 만족도를 표시해 주십시오
(매우불만족 1 ~ 7 매우만족) 1 2 3 4 5 6 7
 12. 연습 및 대회 시 사용하시는 스포츠 장비 (예: 썰매, 휠체어)에 대한 만족도 표시해 주십시오 (매우불만족 1 ~ 7 매우만족)
1 2 3 4 5 6 7
- 제 2 호 설문조사. (The Autonomy Supportive Coaching Questionnaire)

코치의 선수 자율성 지원 평가 → 코치에 관한 질문입니다. 각 문항의 내용들을 읽은 후 어느 정도 일치하는지를 표시해 주십시오.

	내 용	전혀 동의 하지 않는다			중립	동의 한다		
		1	2	3		4	5	6
1	코치들은 우리가 연습 내용을 선택할 수 있도록 합니다	1	2	3	4	5	6	7
2	코치들은 연습에 관해 팀 의견을 물어 봅니다.	1	2	3	4	5	6	7
3	코치들은 내가 어떤 연습(훈련)을 하고 싶은지 물어봅니다.	1	2	3	4	5	6	7
4	코치들은 연습에 관해 팀 의견을 들어줍니다.	1	2	3	4	5	6	7
5	코치들은 연습에 관해 나의 의견을 들어줍니다.	1	2	3	4	5	6	7
6	코치들은 내가 선택한 훈련에 관해 격려해 줍니다.	1	2	3	4	5	6	7
7	코치들은 훈련에 관해 내가 내린 결정에 대해 격려해 줍니다.	1	2	3	4	5	6	7
8	코치들은 훈련 중 나의 마음가짐에 대해 격려해 줍니다.	1	2	3	4	5	6	7
9	코치들은 훈련 시 나의 노력에 대해 격려해 줍니다.	1	2	3	4	5	6	7

제 3 호설문조사. 스포츠동기척도 (The Sport Motivation Scale -II)

각 문항의 내용들을 읽은 후 «내가 현재 운동을 하는 이유»에 관해 어느 정도 일치하는지를 표시해 주십시오.

	내 용	전혀 동의 하지 않는다			중립	동의 한다		
		1	2	3		4	5	6
1	주변사람들(지도자, 부모님, 동료 등)에게 인정받고 싶기 때문에	1	2	3	4	5	6	7
2	운동을 배우는 것이 즐겁기 때문에	1	2	3	4	5	6	7
3	운동을 하지 않으면 기분이 나쁘기 때문에	1	2	3	4	5	6	7
4	운동을 하는 것은 진정 내가 누구인가를 반영하기 때문에	1	2	3	4	5	6	7
5	스포츠를 통해, 나의 깊은 원칙에 따라 살기 때문에.	1	2	3	4	5	6	7
6	운동을 하지 않으면 주변 사람들이 나를 탐탁하지 않을 것이라고 생각하기 때문에	1	2	3	4	5	6	7
7	운동을 하면 어떻게 개선시킬 수 있는지 배우는 것은 매우 흥미로운 일이기 때문에	1	2	3	4	5	6	7
8	주변 사람들이 내가 하는 일에 대해 나를 칭찬할 것이기 때문에	1	2	3	4	5	6	7
9	자기 개발의 방법으로 이 스포츠를 선택했기 때문에	1	2	3	4	5	6	7
10	운동하는 것은 나와는 관계가 없는 일인 것 같다	1	2	3	4	5	6	7
11	나의 다른 면을 발전시키기 위해 내가 선택한 가장 좋은 방법 중 하나이기 때문에	1	2	3	4	5	6	7
12	운동을 하면 내가 나 자신에 대해 더 좋게 느끼기 때문에	1	2	3	4	5	6	7
13	새로운 훈련 전략을 발견하는 것이 즐겁기 때문에	1	2	3	4	5	6	7
14	운동을 하지 않았다면 나는 보람을 느끼지 못했을 것이기 때문에	1	2	3	4	5	6	7
15	스포츠에 참여하는 것은 내 인생에서 필수적인 부분이기 때문에	1	2	3	4	5	6	7
16	내가 아끼는 사람들이 내가 운동을 하지 않는다면 속상할 것이기 때문에.	1	2	3	4	5	6	7

17	스스로 나의 가치를 개발하는 좋은 방법을 발견했기 때문에.	1	2	3	4	5	6	7
18	스포츠를 하는데 좋은 이유가 있었지만, 지금은 계속해야 하는지에 대해 고민한다	1	2	3	4	5	6	7