

## **Influence of forechecking and backchecking of the opponent on the final result of the match at the world junior championship in ice hockey**

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Published online: January 31, 2022

(Accepted for publication January 15, 2022)

DOI:10.7752/jpes.2022.01013

### **Abstract**

The aim of this research was to analyze selected defensive playing tactics of an individual at the 2021 World Junior Championships in Canada. We monitored selected defensive strategies [i.e., attacking an opponent with a puck (forechecking) and chasing an opponent with a puck (backchecking)] in selected matches at the World Junior Championships in Ice Hockey. We focused on the quantity of these actions and evaluated the success of these individual defensive playing tactics. We recorded the obtained data in record sheets, which we then evaluated using statistical methods and chi-squared test. Our study shows that a significantly higher number of selected individual defensive game tactics does not determine whether the team will be successful in the match and win. The teams that won their matches had a significantly lower number of attacks on the opponent than the teams that lost their matches. We hypothesize that a significantly higher number of attacks on an opponent with a puck will not affect the victory in the match. Our hypothesis No. 1 was confirmed. The obtained results were verified by the chi-squared test and were confirmed to be statistically significant, with 1% of statistical significance. Based on the acquired data, we can confirm that a significantly higher number of attacks by an opponent with a puck does not affect the victory in the match.

**Keywords:** ice hockey, individual game activities, one-on-one battles, defensive phase of the game, offensive phase of the game, World Junior Championship

### **Introduction**

Skating is the most important skill in ice hockey. The primary determinants of a good skater are versatility, strength, speed, and endurance (International Ice Hockey Center of Excellence 2012c.). Regardless of these determinants, the most important factor for effective skating is technique.

Tóth (2010) argues that the main determinant for 90% of other individual's playing activities is skating, which is considerably related to the player's performance in the match. Individual game performance is closely related to skating, and we can easily define it as a limiting factor. Vala, Valová, Trnka and Petr (2020) argue that ice hockey is one of the most popular and most watched sports in the world (similar to most team sports). Its speed, both in the movement of players and in solving game situations, has recently increased, and it is very likely that this trend will continue in the future. Hockey matches tend to be very dynamic, and it is typical for players to take turns in short intervals, during which they usually move on the ice with submaximal or maximum intensity. The importance of skating is also confirmed by Hockey Canada Skill Development (2020), which recommends improving this game skill to be part of the training process throughout the entire athlete's career.

Peráček (2018) states that the World Championships, European Championships, and other best club competitions considerably affect development tendencies such as universality of playing positions, intensification, intellectualization, etc. in sports games. These trends occur in the abovementioned actions. Development tendencies also serve as feedback for the system of youth sports.

Contemporary hockey is greatly influenced by development trends. New rules were applied to adapt North America and Europe to a less tactical and complicated game with higher pace and intensity. Transition game (i.e., constant changes in the offensive and defensive phases of the game) has become an important element of the game. Transition is a part of the game where there is a switch from attack to defense and vice versa. There is a strong emphasis on crossing the neutral zone (McSorley, Servette 2009).

The team that plays at the highest level can make the transition from defense to attack in approximately 3 s. If we look at it from a statistical point of view, up to 88% of goals will fall within 10 s of getting the puck (McSorley 2009). Constantine (2011) argues that ice hockey is a game of transitions. The faster is the transition, the better are the chances of gaining an advantage over an opponent who is often unprepared and vulnerable at these moments. Výboh et al. (2005) describe individual's defensive game activities as activities by which a player seeks to gain control of the puck or to prevent an opponent from attempting to initiate an offensive phase of the game. The most important requirement for a player to be successful in the defensive phase of the game is high technical and tactical maturity in individual defensive game activities.

Tóth (2010) divides individual defensive playing activities as follows: taking the puck with a hockey stick, taking the puck with the body, blocking the player, blocking the shots, covering the area, forechecking, backchecking, and shooting the puck away from the defensive zone.

Forechecking is an individual's playing activity that is used as part of a team tactic to gain or regain the puck, by putting pressure on an opponent (Arjala, Petäjä 2013).

Authors Bowman (1979) and Pavliš (2002) distinguish between two types of attacking:

- Passive attack - no contact with the opponent
- Active/aggressive attack - quick occupation of the opponent with the generation of a personal duel

Skating agility and speed are prerequisites for a successful tight defense. The skating skill, the curved direction of travel, and the dynamics of the defense game allow to evoke a personal duel. Skating in the arc of the attacking player allows to drive the opponent's player to the backhand side and thus get him into a space and time constraint. The technique of successful attack requires the player's skill to predict the opponent's movement with the puck, skating agility, and good work with a hockey stick with which he puts constant pressure on the opponent (Bukač, 2005).

Backchecking can be defined as the defensive game activity of an individual, the goal of which is to skate back into his defensive zone, and thus prevent the attacking players from developing a nascent attacking action (Hendricks 2012).

Westerlund (2002) states that the most frequent and common game situation in ice hockey is the loss of the puck of attacking players in the attacking zone. The author states that this situation occurs approximately 200 times in each match. After losing the puck, the attacking team must automatically focus on a quick change and must move from the attack to the defensive phase of the game (transition game). After losing the puck in the attacking zone, the attacking player should become a defender with two fundamental choices:

- directly (head on) control the opponent, i.e., attack him,
- control the opponent at a certain angle (get him into a trap or "funnel") and backcheck him.

Occupying puck-free players next to the rink boards in the neutral zone is called "classic backchecking". This backchecking involves wingers, whose role is to maintain territory and the needed distance from the opponent's players in cooperation with the defenders. The second alternative is a fast approach to the opponent, which means that the closest defending player skates to the attacking player and attacks him and puts pressure on him, which puts the attacking player in time and space constraints (Bukač, 2005). O'Donnell (2010) describes three factors that prevent many players from being successful in backchecking, which are: fatigue, poor positional play, and insufficient anticipation of players in the game.

## Materials and Methods

The aim of this study was to identify the influence on the result of the match of the frequency of attacking the opponent with the puck and backchecking.

### Research hypotheses:

1. We hypothesize that a significantly higher number of attacks on an opponent with a puck will not affect the victory in the match.
2. We hypothesize that the winning teams will be considerably more successful in backchecking than the defeated teams.

### Research tasks:

This research was focused on studying the influence of the number of selected defensive game activities on the result of the match at the 2021 World Junior Championships in Canada. We chose the teams in group "A": Canada, Finland, Germany, Slovakia, and Switzerland. We followed the teams at all preliminary matches.

**Table 1** Final table of group "A"

Team	Games	Wins	Losses	Overtime Wins	Overtime Losses	Average Age	Points
CANADA	4	4	0	0	0	19	12
FINLAND	4	3	1	0	0	19	9
GERMANY	4	1	2	1	0	19	5
SLOVAKIA	4	1	2	0	1	18	4
SWITZERLAND	4	0	4	0	0	18	0

In this study, we used the method of indirect observation (note: ex post facto cross-sectional research) to achieve the stated objective. We watched selected matches in the form of a video recording. We observed a total of 10 matches of group "A" at the 2021 World Junior Championships in Canada.

We recorded the observation results in a prepared record sheet. For clarity, in the record sheet, we divided the selected defensive game activities of an individual into a table. We monitored the number and success of selected defensive game activities. For each match, we used the dashed method of writing data into the record sheet.

Monitored defensive game activities of an individual:

Attacking an opponent with a puck (forechecking) – characteristics of the methodology:

- Successful (+) – successful forechecking is defined as when the defending player exerts pressure on the opponent with his active forward movement and is able to remove the puck or the attacking player loses or passes the puck to his teammate under time and space pressure.
- Unsuccessful (–) – unsuccessful forechecking is defined as when the attacking player can get rid of the defending player and continues to play with the puck.

Backchecking of an opponent with a puck – characteristics of the methodology:

- Successful (+) – successful backchecking is defined as when the defending player skates and stops the attacking player with a puck, prevents the pass, or wins the puck himself during skating.
- Unsuccessful (–) – unsuccessful backchecking is defined as when the defending player does not stop the opponent and allows him another offensive effort or when the defending player puts no effort into catching up to the opponent with the puck.

TEAM	1. period			2. period			3. period			Overtime			SUMMARY	%
	DF	MZ	OF	DF	MZ	OF	DZ	MZ	OZ	DF	MZ	OZ		
FORECHECKING														
Summary (+)														
Summary (-)														
TEAM	1. period			2. period			3. period			Overtime			SUMMARY	%
	DF	MZ	OF	DF	MZ	OF	DZ	MZ	OZ	DF	MZ	OZ		
BACKCHECKING														
Summary(+)														
Summary (-)														

**Figure 1** Record sheet for monitoring selected game activities

We used basic mathematical operations and statistical characteristics, elementary thought procedures, and mathematical methods to evaluate and process the obtained empirical data. To demonstrate statistical significance, we used a chi-squared test, which was applied to the calculation of qualitative nominal variables. We present the research results with 1% of statistical significance.

### Results and Discussion

We recorded a total of 1,063 attempts to attack an opponent with a puck. Teams that were successful (winning) in their matches made a total of 519 attempts at forechecking, which accounted for 48.82% of the total number of all attempts.

Regarding the success of attacking an opponent with a puck, out of the total number of 1063 attempts, 595 were successful (55.97%), and 468 were unsuccessful (44.03%).

Teams that were unsuccessful (lost) in their matches made a total of 544 attempts at forechecking, which accounted for 51.18% of all attempts. Of notice, the teams that were defeated had a greater number of attacks on the opponent with the puck. We attribute this to the fact that they played more without a puck, thus they tried to get the puck under their control from the opponent and therefore had a higher number of attacks than the opponent who won the match and played more with the puck. Although we cannot statistically substantiate this statement, we can empirically justify it because we observed the matches and knew their course.

The teams that won their matches had a significantly lower number of attacks on the opponent than the teams that lost their matches. Thus, our hypothesis No. 1 was confirmed. The obtained results verified by the chi-squared test proved to be statistically significant, with 1% of statistical significance.

From the available acquired data, we can confirm that a significantly higher number of attacks by an opponent with a puck does not affect the victory in the match.

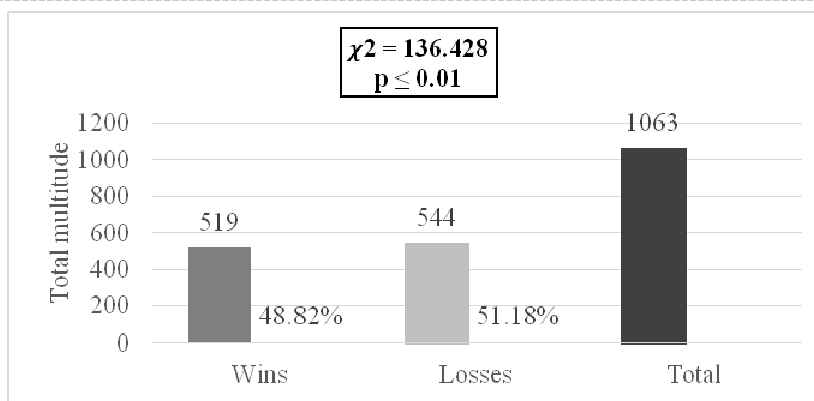


Figure 2 Total number - forechecking

Table 2 Total number (forechecking) in all monitored matches

OBSERVED VALUES						
Successful in match	FORECHECKING					%
	Successful		Unsuccessful		Total	
Wins	385	74.18%	134	25.82%	519	48.82%
Losses	210	38.60%	334	61.40%	544	51.18%
Total	595		468		1063	100.00%

Next, we present the relationship between successful backchecking and the result of the match according to the established hypothesis No. 2 where we assumed that the winners will be significantly more successful in backchecking than the defeated teams. We recorded 403 successful attempts at backchecking in won matches and 217 additional backchecking in lost matches. In Figure 3, we show the successful and unsuccessful backchecking in won and lost matches.

In the won matches, we noticed a higher percentage of successful backchecking than in the lost matches. The obtained results, which were verified by the chi-squared test, were statistically significant at the 1% level of statistical significance. Thus, we can conclude that the match is not determined by the higher number of game activities of an individual, which was confirmed in hypothesis No. 1; however, the success of a given game activity is important, even if the quantity of activities is lower.

From the available acquired data, we can confirm that the winning teams were significantly more successful in backchecking than the defeated teams.

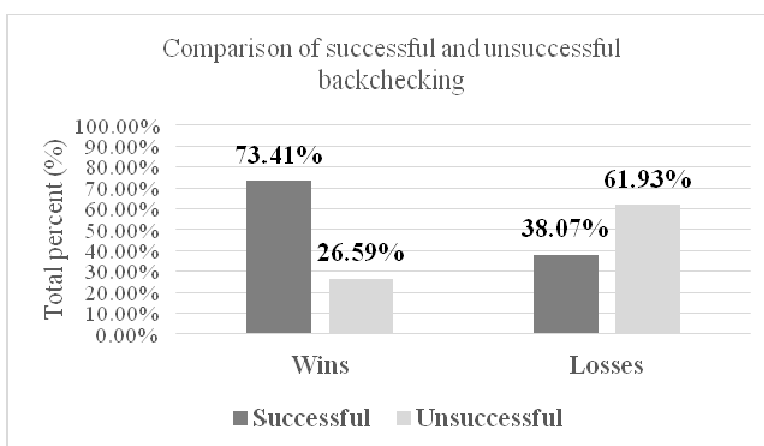


Figure 3 Comparison of successful and unsuccessful backchecking

In our research, we recorded a total of 1119 attempts at backchecking.

The teams that were successful in their matches and won made a total of 549 attempts at backchecking. Of these 549 attempts, 403 were successful (which represents 73.41%) and 146 were failed attempts (representing 26.59%). Here, we observed a striking difference between successful and unsuccessful attempts to backcheck.

Teams that failed and lost in their matches made a total of 570 attempts to backcheck. Of these 570 attempts, up to 353 failed (representing 61.93%). A total of 217 successful attempts were made, which represents 38.07%.

Backchecking is mostly performed by the attackers, who, in the event of losing the puck in the offensive phase of the game, must immediately enter the defensive phase of the game and try to get the puck back under their control as quickly as possible. Player fatigue, poor positional play, and insufficient anticipation are the factors that O'Donnell (2010) specifies as factors that prevent players from being successful at backchecking.

Therefore, in our opinion, it is not important to be able to backcheck many times; rather, it is important to be successful in those attempts.

The obtained results, which were verified by the chi-squared test, were statistically significant at the 1% level of statistical significance.

Based on the available acquired data, we can confirm that a significantly higher number of backchecking does not affect the victory in the match.

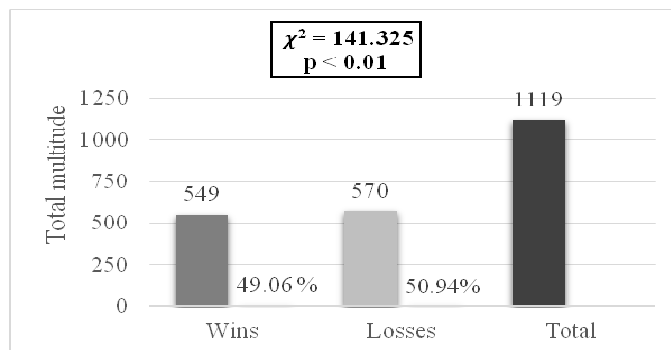


Figure 4 Total number - backchecking

Table 3 Total number (backchecking) in all monitored matches

OBSERVED VALUES							
Successful in match	BACKCHECKING					Total	%
	Successful	Unsuccessful	Total	%			
Wins	403	73.41%	146	26.59%	549	49.06%	
Losses	217	38.07%	353	61.93%	570	50.94%	
Total	620		499		1119	100.00%	

**Conclusions**

In conclusion, we managed to statistically confirm both established hypotheses. We determined whether the number of selected game activities of an individual affects the final result in the match. Therefore, we can conclude that the number of selected game activities of an individual does not affect the final result in the match, and this relationship is statistically significant. This result is encouraging and requires further evaluation. In future research, it is necessary to quantitatively expand the monitored set and monitored game activities of an individual.

Based on the obtained results, we can state that in contemporary world hockey, it is necessary to have perfectly mastered skating skills, on which the performance of other game activities on ice depends. Defensive game activities of an individual are also essential and greatly dependent on skating skills.

Based on our observations, it is clear that in matches, the number of defensive game activities of an individual is not important; rather, we need to focus on the success of mastering game tactics. Therefore, we recommend that coaches in their practice pay attention to the successful management of game activities and not focus on quantity but on quality.

**References**

Arjala, A, V. Petäjä. (2013). *An instrument for analyzing offensive game sense in ice hockey*. Bachelor thesis. University of Applied Sciences Haaga-Helia. Degree Program in Sport and Leisure Management.

Bowman, S. (1979). *Effective fore-checking*. Hockey.

Bukač, L. (2005). *Intelekt, učení, dovednosti a koučování v ledním hokeji. Komprehezivní pohled na utkání, trénink a rozvoj individuálního herního výkonu*. Praha: Olympia. ISBN 8070338962.

Constatine, K. (2011). *Creating an Effective Transition Game* [online]. April 2011 [cit. 2021-03-10] Dostupné z: <https://lnk.sk/EOT6>

- Helešic, J. (2005). Některé aspekty kondiční přípravy hokejistu ve vztahu k rychlosti bruslení. In: *Optimální působení tělesné zátěže a výživy*. Hradec Králové: Univerzita Hradec Králové. ISBN 80-85109-47-6.
- Hendricks, S. (2012). *Fantasy hockey. The Ultimate „How to“ Guide for Fantasy Hockey Players*. Austin, Texas: Extra Point Press. ISBN 978-1-93-66-35-10-8.
- Hockey Canada Development Program, 2020. *Skating* [online] Publikované 2020 [cit. 2021-03-11] Dostupné z: <https://lnk.sk/oxwj>
- International Ice Hockey Centre Of Excellence, 2012c. *Hockey Centre*. [online] Publikované 2012 [cit. 2021-03-19] Publikované z : <https://lnk.sk/jwhq>
- McSorley, CH. (2009). Transition. In: I. Andrejkovič. *Taktika v dnešnom hokeji* [online]. Publikované 2009 [cit. 2021-10-03] Dostupné z: <https://lnk.sk/O234>
- O'donnell, P. (2010). *Backchecking by Paul O'Donnell*. [online] Publikované 2010 [cit. 2021-03-10] Dostupné z: <https://lnk.sk/koab>
- Pavliš, Z. et. al. (2002). *Průručka po trenery ledního hokeje I. část*. Praha: Svaz ledního hokeje. ISBN 80-238-2194-6.
- Peráček, P. (2018). *Teória športových hier: Vysokoškolská učebnica pre študentov FTVŠ UK v Bratislave*. Bratislava : Slovenská vedecká spoločnosť pre telesnú výchovu a šport. ISBN 978-80-89075-74-4.
- Tóth, I. et al. (2010). *Tréner ľadového hokeja: Vysokoškolská učebnica pre trénerov špecializácie v ľadovom hokeji*. Bratislava: TO-MI Ice Hockey Agency. ISBN 978-80-970545-1-9.
- Vala, R., Valova, M., Trnka, P. & Petr, J. (2020). Comparison of load intensity in IceHockey players at different game positions during a match. *Journal of Physical Education and Sport*, 20(Supplement issue 6),pp. 3206-3211. ISSN 2247-8051
- Výboh, A., et al. (2005). *Teória a didaktika ľadového hokeja III: Obsahové zameranie tréningového procesu mladších žiakov, starších žiakov, dorastu a juniorov*. Bratislava. Steelprint. ISBN 80-969475-1-6.