

## The Minutes of Play Before and During a 2-Minute Suspension in Semi-Professional Male and Female Handball

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### ABSTRACT:

Illegal actions penalized with 2-minute suspensions or a red card did not affect match outcomes in Icelandic semi-professional handball across four seasons (Laxdal & Ivarsson, 2023). The objective of the current study was to analyze the scoring of teams in numerical superiority and the penalized team for four minutes that commences two minutes before the 2-minute suspension begins. This was tested separately in female (n=10) and male (n=17) teams in a dataset including five seasons of play (2018-2022) after the 2016 rule changes. The number of suspensions was 3,122 after excluding the ones that overlapped with another suspension or started in the first or last 2 minutes of a match. The analysis was done using team performance over a season as the unit of analysis. The distribution of goals was not normally distributed for the penalized team or the team with numerical superiority for each minute within the four-minute period of interest, so non-parametric Wilcoxon procedures were used. The median goals per minute for the female teams receiving suspension (vs. opponents) were 0.267\* (0.341), 0.359 (0.271), 0.187\* (0.463) and 0.275\* (0.464), with the team suspended scoring significantly fewer goals during all but the second minute period ( $p \leq .017$ ). For males, median goals per minute for the teams receiving suspension (vs. opponents) were 0.304\* (0.347), 0.396\*\* (0.269), \*0.222 (0.525) and \*0.333 (0.465), with the team suspended scoring significantly fewer goals in the 1st, third, and 4th minute period ( $p \leq .005$ ), but significantly more goals in the second period\*\* ( $p = .002$ ). Significant differences were observed using a Friedman test for both the team ( $p < .001$ ) and their opponents ( $p < .001$ ) in the number of goals scored during the four minutes for both males and females. The scoring pattern is similar for females and males during these minutes of interest. It was expected that scoring during a 2-minute suspension would differ in favor of the team with numerical superiority since teams receiving suspension restart the set play in defense, giving the opponents time and opportunity to score. However, results showing the team later to be penalized to score more (significant for male and  $p = .051$  for female) in the minute before the suspension raises questions. One explanation is that the team is experiencing the benefits of aggressive defensive play in the minute before the team is finally penalized.

**KEY WORDS** exclusions, Scandinavia, team handball, time series

### REFERENCE:

Laxdal, A., & Ivarsson, A. (2023). Breaking up the play: The relationship between legal stops and winning in team handball. *International Journal of Sports Science & Coaching*, 18(1), 240–244. <https://doi.org/10.1177/17479541211070787>