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Type 1 Diabetes and Youth Sports in Sweden: A Field Experiment on Discrimination

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Abstract

This study evaluated discrimination against children with Type 1 Diabetes Mellitus (T1DM) in Swedish sports clubs through a field experiment. Two fictitious fathers sent emails to 193 top-division clubs in football, floorball, ice hockey, and handball, one disclosing his son's T1DM condition. The investigation focused on disparities in clubs' responses and information provided. Results indicated no significant difference in positive or comprehensive responses between emails mentioning T1DM and those that did not, suggesting minimal bias at initial contact and an inclusive approach by the clubs towards children with T1DM.

Keywords: Type 1 Diabetes Mellitus; Discrimination; Sports clubs; Field experiment.

JEL codes: J14; J71.

Introduction

Previous research has documented disparities in economic outcomes between children with Type 1 Diabetes Mellitus (T1DM) and their peers. These studies indicate that children with T1DM tend to experience a higher prevalence of mental illness, achieve lower grades in school, and earn lower incomes later in life (Northam et al., 2005; Dahlqvist & Källén, 2007; Milton et al., 2006).

An active lifestyle, including participation in sports, is a crucial factor for enhancing the quality of life of children with certain health conditions. Sports clubs offer a platform for such activities. In this study, we conducted a field experiment to explore how open sports clubs are to including children with T1DM in their training activities, thereby assessing these children's opportunities for active participation.

To investigate whether children with T1DM face discrimination from sports clubs in Sweden, our experiment involved two fathers sending emails to these clubs. One father mentioned his son's T1DM diagnosis six months ago, while the other father's email contained no such information. This approach allowed us to assess the clubs' responses to children with and without a T1DM diagnosis.

Studying discrimination against different groups of people in various markets and across countries using field experiments has proven to be powerful (Bertrand & Duflo, 2017; Baert, 2018). Turning our focus to discrimination against children with T1DM, the study by Ahmed et al. (2021) revealed its presence in the context of Swedish schools, specifically when parents apply for their children's admission to the mandatory preschool class.

Method

In this experiment, conducted during the autumn 2023, we reached out to all sports clubs in the highest leagues of the four largest team sports in Sweden: football, floorball, ice hockey, and handball. For football, we contacted clubs in the "Allsvenskan," "Superettan," and

“Division 1” leagues of the 2023 season. Similarly, in floorball, the clubs in the “Svenska Superligan” and “Allsvenskan” for the 2023–24 season were approached. Ice hockey clubs from the “Svenska Hockeyligan,” “Allsvenskan,” and “Hockeyettan” for the 2023–24 season, and handball clubs from the “Handbollsligan” and “Allsvenskan” for the same season were also contacted. A total of 195 sports clubs were initially approached via email by two fictitious fathers with typically Swedish-sounding names. Due to email malfunctions, two clubs were excluded, resulting in a final sample of 193 clubs. Email inquiries were made to the clubs using addresses found on their websites, either by a father with a son without disabilities or by a father whose son had T1DM.

We focused exclusively on organizations, specifically higher-division sports clubs, and did not process any personal data. Consequently, there were no direct risks to individuals associated with this project. We anonymized all data to ensure that no specific sports club could be identified from our results. Our aim was to analyze aggregated data rather than individual clubs. To minimize the potential impact on individuals who often have personal and direct responsibilities in smaller clubs, we deliberately excluded those in the lower divisions. This approach was taken to prevent any adverse effects our findings might have on these individuals. Our experiment includes only one experimental manipulation, comparing how sports clubs treat a boy with T1DM versus a boy without disabilities. We utilized a “between-subjects,” randomized design, where each sports club received an email from one of two fictitious fathers, randomly assigned. The email inquired about whether the father’s son could join the club’s training and requested information about the team’s training schedules. The email inquiry looked like as follows:

Hello! We have recently moved and have an 8-year-old son who is enthusiastic about playing football/floorball/ice hockey/handball, and is looking for a team to train with. Is he welcome to join your club? Could

you please provide information about the team and training times?

[Additionally, I would like to inform you that my son was diagnosed with Type 1 Diabetes six months ago.] Regards, Lars Johansson

The primary distinction between the two fictitious fathers' emails was the inclusion of a statement about the son having T1DM, indicated in brackets, for the father of the son with T1DM. We recorded the sports clubs' responses as outcome variables in the experiment, focusing primarily on two aspects, represented as dummy variables:

1. Whether the fathers received a *positive response*, in a broad sense, from the sports clubs, essentially indicating acceptance (i.e., a non-rejection).
2. Whether the fathers received a *complete response* that included confirmation of the son's welcome to join the club's training, along with details about the team and training schedules.

Hence, the second outcome variable is more stringent than the first. By examining whether there are differences in these outcomes between the father with a son with T1DM and the father with a son without disabilities, our experiment seeks to answer whether discrimination against children with disabilities occurs in interactions with Swedish sports clubs.

The data supporting the findings of this study are available on Zenodo (<https://doi.org/10.5281/zenodo.10222564>). The project underwent an ethical review by the Swedish Ethical Review Authority (Case number: 2023-06117-01).

Results

Tables 1 and 2 summarize the results of our experiment. Table 1 details the likelihood of receiving a *positive response* from sports clubs under the two conditions in our experiment, covering both collective data for all sports and specific data for individual sports. The results reveal that, across all sports, a father with a non-disabled son received a positive response from

the clubs in 77% of instances, whereas a father with a son with T1DM received a positive response 66% of the time. This indicates that fathers of sons without disabilities were about 17% more likely to receive positive responses compared to those with sons diagnosed with T1DM. This disparity is weakly significant according to the χ^2 -test but does not reach statistical significance at conventional levels in the Fisher exact test ($p = .109$). When examining each sport individually, no statistically significant differences were found between the control and treatment conditions.

{Table 1 about here}

{Table 2 about here}

Table 2 presents the probabilities of receiving a *comprehensive response* from sports clubs, analyzed collectively for all sports and separately for each sport, categorized by control and treatment conditions. In every scenario analyzed, we observed no statistically significant differences in the likelihood of receiving a complete response from the sports clubs when comparing cases of fathers with non-disabled sons to those with sons diagnosed with T1DM.

Conclusion

This study explored whether children with T1DM face discrimination when attempting to join sports clubs in Sweden. Our findings revealed a slight, yet not statistically significant, difference in positive response rates from sports clubs to fathers of sons with and without T1DM. This suggests that there is no apparent bias against children with T1DM at the initial point of contact.

Furthermore, we observed no significant difference in the likelihood of receiving comprehensive responses from the sports clubs. This indicates that, upon engaging with the clubs, families of children with T1DM are just as likely to receive detailed information and support as those without the condition. This finding is encouraging as it points to inclusivity in these clubs, especially in terms of practical participation in sports activities. The result is

especially important since previous research has shown disparities in economic outcomes between children with T1DM and other children. In discrimination research, it is crucial to report both null results and findings that contradict prevailing hypotheses, as they contribute to a more nuanced and comprehensive understanding of the complexities involved.

It is important, however, to recognize the limitations of our study. Our methodology, which relied on email correspondence, might not capture the full extent of personal interactions that could occur. Additionally, focusing on higher-division sports clubs may not provide a complete picture of all sports organizations in Sweden, or other countries.

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Table 1*Probability of receiving a positive response*

	Control	T1DM	χ^2 -test
All sports	77% (78/101)	66% (61/92)	$\chi^2(1, N = 193) = 2.85, p = .091$
Football	67% (22/33)	52% (15/29)	$\chi^2(1, N = 62) = 1.43, p = .231$
Floorball	83% (15/18)	67% (12/18)	$\chi^2(1, N = 36) = 1.33, p = .248$
Ice hockey	80% (28/35)	72% (23/32)	$\chi^2(1, N = 67) = 0.61, p = .436$
Handball	87% (13/15)	85% (11/13)	$\chi^2(1, N = 28) = 0.24, p = .887$

Note: Number of *positive responses* and total number of cases are given in parentheses. The Fisher exact test led to the same conclusions, generating slightly larger *p*-values. Hence, the difference between conditions over all sports in the first row does not remain statistically significant when using the Fisher exact test.

Table 2*Probability of receiving a complete response*

	Control	T1DM	χ^2 -test
All sports	11% (11/101)	13% (12/92)	$\chi^2(1, N = 193) = 0.21, p = .645$
Football	0% (0/33)	3% (1/29)	$\chi^2(1, N = 62) = 1.16, p = .282$
Floorball	17% (3/18)	11% (2/18)	$\chi^2(1, N = 36) = 0.23, p = .630$
Ice hockey	17% (6/35)	13% (4/32)	$\chi^2(1, N = 67) = 0.28, p = .594$
Handball	13% (2/15)	38% (5/13)	$\chi^2(1, N = 28) = 2.35, p = .126$

Note: Number of *complete responses* and total number of cases are given in parentheses. The Fisher exact test led to the same conclusions, generating slightly larger *p*-values.