WEBER STATE UNIVERSITY

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OVERUSE INJURY PREVENTION EDUCATION FOR YOUTH BASEBALL PLAYERS

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ABSTRACT

The incidence of overuse sports injuries in children and adolescents has sharply increased ([1]) with baseball being one of the sports with the highest rates of injury ([2]). Several factors are contributing to the increase; however, many youth athletes and their parents are unaware that most of these overuse injuries are preventable ([1, 2]). The purpose of this project is to develop overuse injury prevention education material that is distributed to youth baseball players and their parents during a sports physical or well-child visit. The education provided is nurse-driven and delivered to the athlete and parent before the provider completes the physical assessment. This evidence-based approach delivers timely education, offers the athlete and parent preparation material, and allows the opportunity to discuss follow-up questions with the provider.

PICO QUESTION

In children and adolescent baseball players, how does providing education to parents and players in pediatric clinics that perform sports physicals, compared with no education intervention pre-season, affect the overuse injury rate during a 12-month period?

LITERATURE REVIEW

The following themes emerged in the literature review regarding overuse sports injuries in youth and adolescent baseball players which served to drive the focus of the project.

- **Definitions:** basic definition of an overuse sports injury ([3, 4]), severity rating scale ([3]), how a sports injury is perceived by athletes, coaches, and healthcare team ([5]), and common areas for overuse injuries ([6, 7]).
- **Risk Factors:** age, poor mechanics, hours spent playing ([6]), position played ([2, 6]), rapid growth ([3]), fatigue ([8, 9]), immature skeletal structure ([3, 6]), playing through pain ([9]), misinformation ([1]), number of pitches thrown, lack of rest days ([2, 7, 8]), early sports specialization ([4, 8]), and failure to comply with guidelines ([2, 7, 8, 9]).
- **Prevention of Overuse Injuries:** most of these injuries can be prevented by following national organizations and expert guidelines for maximum number of pitches per game and rest days ([7, 8, 10]), avoidance of playing on multiple teams, avoidance of playing year-round, mindful of player position, use of proper mechanics ([7]), following strengthening and conditioning guidelines ([7, 8, 11]), and self-regulation ([12, 13]).
- **Injury Prevention Education:** involve the athlete and the people surrounding them ([2]), provide awareness of national organizations and expert guidelines ([7, 8, 10]), recognition of early warning signs, importance of strengthening exercises ([7, 11]), timing and personnel delivery of injury prevention education ([14, 15, 16, 17]), educational material ([18]).

PROJECT METHODOLOGY

The practice change proposed is providing nurse-led overuse injury prevention education to youth baseball players during a well-child or sports physical clinic visit taking place before the youth athlete is seen by the provider. The goals are to use clinic time more efficiently, utilize nursing patient education expertise, provide a more caring teaching environment, disseminate a quality education pamphlet, and prepare the parent and youth athlete to ask follow-up questions during their time with the provider.

Plan

- Formal presentation to key stakeholders aimed to gain approval of proposed practice change in delivery and timing of injury prevention education in the clinic setting ([19]):
- **Nurse-led** injury prevention education ([14]).
- **Timing of delivery** of education prior to the provider completing the sports physical or well-child check ([15]).
- **Dissemination** of educational pamphlet designed with QR codes ([18]) for easy access to resources such as Pitch Smart and AAP Guidelines as well as videos of strength and stretching exercises. Scan here to view proposed education pamphlet:

(https://www.pxfuel.com/en/free-photo-jiarz). CC0 for Public Domain Dedication.

Implementation

- Recruit change champions and provide education to nursing staff related to overuse injuries, prevention, resources, and education strategies.
- Each discipline in the clinic is important to the success of the project. Include all team members in the implementation and stress the importance of the team support.
- Present proposed practice change and implementation to local high school coaches, trainers, Little League and Super League coaches, and physical therapists to gain buy-in and support after the athlete has received the information ([19]).

Evaluation

- To evaluate the effectiveness of the education content, delivery, and timing of the education, parents and youth athletes will be asked to complete a pre-visit and follow-up survey (follow-up survey accessed via QR code on pamphlet).
- Charts of patients that received the education will be flagged.
- Data will be gathered mid-season and post-season (up to one year), regarding any flagged patient that visited the facility with complaints of injury that could be classified as an overuse injury.

(https://www.pickpik.com/boy-player-baseball-pitcher-sport-ball-93695). CC0 for Public Domain Dedication.

Implications

- Ease of application of this type of nurse-led, efficient, effective education delivery to other sports injuries and other education topics such as vaccines.
- Patient is flagged for the specific type of education required for nursing staff.
- Patient and family receive education and a pamphlet to use to access resources and follow-up references.
- Patient and family are prepped to ask follow up questions with provider.

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THEORETICAL FRAMEWORK

- **The revised Johns Hopkins Nursing Evidence-Based Practice** ([19])
  - This model's three components provided the framework for the project.
  - **Inquiry:** Is there a more innovative, efficient, effective way to provide injury prevention education?
  - **Practice:** Utilizing what the nurse knows regarding delivering injury prevention education and applying that knowledge.
  - **Learning:** The nurse adopts new knowledge and applies it to the practice change.
- **Quality-Caring Nurse Conceptual Model** ([17])
  - Main concepts applicable to this project include:
  - Relationship-centered professional encounters, feeling cared for, and self-caring.
  - Patients and family members who experience caring in the form of personal teaching with the healthcare team are more likely to place a higher value on the learning and demonstrate compliance with recommendations.

CONCLUSIONS

Implementation of an innovative, effective, and efficient nurse-led injury prevention education practice provides an optimal setting for the patient, their parents, and the healthcare team. Youth athletes and their parents are armed with proven strategies and resources to help prevent injury and keep them active, healthy, and playing the game they love in adulthood.

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