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An ice hockey goalie is a unique position, fraught with many mental challenges. All goalies can use mental skills to manage these mental challenges and to improve their performance. In the sport world developing an athlete's mental skills has become a routine training component (Weinberg & Williams, 2015). However, sport-specific, or position-specific mental skills development does not enjoy wide acceptance in ice hockey or the goalie position. In this study we collected data from ice hockey goalies and goalie coaches from several North American and European amateur, national, university, and professional men's and women's teams. The purpose of this study was to determine the mental challenges faced by goalies, and to identify mental skills important to goalies. Goalies and their coaches provided information on the mental challenges and mental skills needs and experiences through online surveys, focus groups, and interviews. While a few participants (n=27) reported some experience working with a mental skills coach or sport psychology consultant, most of the participants had no experience and a lower awareness of mental skills. In the surveys nearly all participants (n=115) rated all mental challenges (e.g., controlling thoughts, performing consistently, maintaining focus) as "a lot" or "always" a challenge. Similarly, nearly all "agreed" or "strongly agreed" that all mental skills are important. The interview and focus group participants (n=35) provided more insight into the challenges and skills. The interview findings confirm that goalies experience most mental challenges, and the most cited challenges require cognitive control skills to manage. However, far fewer interview participants discussed mental skills. Apparently, goalies know the challenges they face but are less aware of the mental skills to manage them. These findings enable the development of MST programs targeted to the specific needs of ice hockey goalies.

MENTAL SKILLS TRAINING FOR ICE HOCKEY GOALIES

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## CHAPTER I: PROJECT OVERVIEW

The position of goalie in the sport of ice hockey is a unique solo position on a team that comes with its own mental challenges. The goalie's job is to prevent goals from being scored on their team, but goals will be scored. When they inevitably are scored on, they must manage the ensuing mental challenges such as emotional control and loss of self-confidence (Smith et al., 1998). Mental skills training enables an ice hockey goalie to manage the mental challenges commonly encountered in the position. However, little applied information is targeted directly to athletes, and almost none specifically to ice hockey goalies. While many of the mental skills that might best suit a goalie are also used in other sports, research has not identified what might best serve a goalie's needs. By determining the specific mental challenges faced by goalies, and obtaining their thoughts on mental skills training, it may be possible to design a mental skills training program for goalies, enabling them to manage the mental challenges of their position and successfully accomplish their job.

### **Background Literature**

Sport competition is fraught with mental challenges (Pankow et al., 2020). The Soviet Union was the first country, in the 1950s, to systematically use mental skills with athletes and coaches (Ryba et al., 2005). The leader of the Soviet sport psychology program, Avksenty Puni, formalized what is probably the earliest mental skills training model. It included arousal control, attentional focus, confidence, distraction control, and goal setting. Mental training was applied in Olympic training to other Warsaw Pact countries in the 1970s and 1980s (Williams & Straub, 2006). In the modern sport world, developing an athlete's mental skills has become a routine training component. This can be readily seen in golf and tennis (Vickers, 2007; Galway, 2008). Mental skills training programs began to be regularly employed in the 1980s. Models of mental skills training programs and research on mental skills training have been developed and described in academic journals. Most current programs are similar and include similar skills.

### **Mental Skills**

Mental skills allow athletes to enhance productive mind/body states, and control unproductive mental states, thus enabling them to perform at their best (Harmison, 2006; Weinberg & Gould, 2019). Although there may be differences among individual mental skills training programs, most include similar skills and techniques. A mental skill is a learned skill



that can be practiced and developed, whereas a mental technique is a practice or technique to facilitate the acquisition of a mental skill or lead to a mental state. Mental skills are often interrelated and are useful for goalies as they are for other athletes (Dohme et al., 2020). The main mental skills common to all MST programs involve cognitive control, which involves controlling thoughts and attention, and emotional control, which involves controlling emotions and levels of arousal.

*Attention Control* involves not only focusing and maintaining attention – but shifting appropriately - and staying in the present. For example, the goalie might need to transition or shift from a broad-external focus while the puck is at the other end of the ice, to a narrow-external focus when the puck is in their zone, and a shot is imminent (Williams et al., 2015). If a goalie is focused too narrowly, it is possible for them to miss essential cues (Memert & Furley, 2007).

*Thought Control* involves recognizing our thoughts, and then deciding whether to indulge in the thought, or “let it go.” Thoughts arise naturally in our minds, and we are often not even aware that we are being carried away, mentally, from our focus of being present in the current moment (Anderson & Waterson, 2017). For a goalie, or any athlete in competition, the present moment, not the past or the future, is where their focus must reside. Goalies can use specific techniques such as thought stopping or imagery to develop thought control. (Williams et al., 2015; Moran, 2014). The goalie must be aware when thoughts are distracting from the present action and be able to regain control of their thoughts and avoid the run-away thoughts of an undisciplined mind (Gardner & Moore, 2007).

*Emotional Control* involves controlling arousal levels (physiology) and related thoughts. (Lazarus, 1991). Arousal may be too high because of anger or anxiety, or excitement, pushing us out of our Individual Zone of Optimal Functioning (IZOF) (Hanin, 2000), and emotional control strategies might differ accordingly. Arousal (physiological component) can be addressed with relaxation techniques, such as breathing exercises and Progressive Muscle Relaxation (PMR) which work on physiology – but also involve focused attention and help control thoughts (Ju & Lien, 2016; Hanton et al., 2015). Arousal regulation involves the goalie being self-aware of their arousal levels during competition and adjusting with techniques such as controlled breathing (Hanin, 2000). Mindfulness, thought control, and arousal regulation all play a part in emotional control

## **Mental Techniques**

Some mental techniques focus on arousal and emotion control, others on attention and thought control. Other techniques help athlete develop awareness of their mental state. Cognitive techniques include self-talk, grid exercise, practice shifting attention as the puck is coming at you (baseball might have ball shot from machine as a focusing drill). Emotional control techniques include breathing, and PMR which also involve attention/thought control.

*Mindfulness* is defined as a specific type of attention – in the present, objective and detached – as in meditation or mindful exercise (Kaufman et al, 2018). Mindfulness training include breathing exercises and meditation practices

*Imagery* is a good pregame preparation technique that a goalie can employ in the locker room before a game, visualizing themselves performing specific techniques successfully. Imagery can also be used to help the goalie acquire, practice and correct technical skills. Other uses for imagery by the goalie include controlling emotional responses, such as imaging a relaxing scene to control emotion, or using imagery to practice shifting attention in specific game situations. Imagery skills can be developed with simple exercise to help athletes develop clearer, controllable images (Vealey & Forlenza, 2015). Imagery can also be used for preparing for competition, coping with pain and injury, and problem solving (Weinberg & Gould, 2019). Some people are better able to use imagery than other.

*Goalsetting* is a mental technique common in MST, often early in MST (Forsblom et al., 2019). Setting goals provides the goalie with direction in their development. Goalsetting is most effective when it applied using the acronym SMARTS. Goals should be Specific, Measurable, Action-oriented (or Achievable), Realistic, Time-based, and Self-determined (Weinberg & Gould, 2019). Goals that are specific and challenging contribute to enhanced performance more that goals that are easy and vague (Locke & Latham, 1990). Goals can be process-oriented, such as learning or improving a skill, or outcome-based, such as winning a game (Burton, 1983, 1984, 1989; Gould, 2015). The goalie can control the process of learning but, the goalie cannot control the outcome. As such, the goalie should focus on process-oriented goals, and what they can control. Process-oriented goals often leads to positive outcomes. Goals are broken down into long-term and short-term goals, with short-term goals often contributing to achieving long-term goals, much like climbing a ladder or staircase (Burton & Naylor, 2002). Goals should be measurable, achievable, realistic, time-based, and self-determined (SMARTS).

*Focused Breathing* involves using a cue word, phrase, mantra or count to focus while engaging in slow, deep breathing. Focused Breathing displaces unwanted thoughts, thus clearing the mind (Ju & Lien, 2016). Focused Breathing can help with thought control, and arousal/emotional control.

*Self-talk* is a mental technique that can be used to direct attention, control thoughts, self-instruct/coach and set the goalie's mindset orientation towards positive performance and results. Positive self-talk, telling yourself that you can, is an effective mental technique to counter negative self-talk, telling yourself that you can't, in which the goalie doubts their abilities in the face of adversity and challenges. Techniques for managing self-talk include thought stopping, changing negative thoughts to positive, countering in which reason is used to change negative thoughts to positive, and reframing a disappointing performance into an opportunity for improvement (Williams et al., 2015; Moran, 2014).

### **Mental Skills Training**

The goal of mental skills training is to enable the athlete to self-assess their situation and needs, and to self-regulate their mental functioning in a desired way (Weinberg & Gould, 2019). In general, MST consists of a standard group of skills for managing mental challenges such as distractions, anxiety, focus, and confidence. Models of mental skills training programs and research on mental skills training have been developed and described in academic journals.

There are several key components to an MST program: Assessment of the athlete's needs (profiling, monitoring), Education of the athlete (gain buy-in, set expectations), Mental skill acquisition (practice/development), Transferring/using the mental skill in a sport setting, and finally Evaluation of the athlete's successful understanding and application of the skill (Weinberg & Gould, 2019).

The first steps in Mental Skills Training (MST) are assessment and education. The next step is using skills to maintain or return to the optimal mental state. Mental skills are interrelated and often contribute to each other.

### **Assessment**

Assessment of the athlete's situation, and the mental challenges they might be facing, can be subjective (interviewing client, interviewing others, observation) and objective (sport specific, general, trait versus state) (Taylor, 1995, 2018). Interviews with the athlete and written assessment tools, such as the Athletic Coping Skills Inventory-28, (Smith et al., 1995), or the

Test of Performance Strategies (Thomas et al., 1999) provide a measure of the athlete's mental skills. Performance profiling is also used to help identify MST objectives (Butler & Hardy, 1992; Jones, 1993).

### ***Education, Practice, Skill Transfer***

The purpose of MST is to learn and implement the mental skills required to meet the athlete's needs in managing the mental challenges of their sport. An effective MST program stresses the importance of mental skill and technique development. These include cognitive skills such as attentional control, and imagery, and emotional skills including arousal regulation, and structured breathing (Weinberg & Williams, 2015). Following the assessment, the sport psychology consultant, in partnership with the athlete, determines which skills to include in the MST based on the athlete's profiling, as well as the available time, and the athlete's motivation and the ability to practice MST (Weinberg & Gould, 2019). MST can be individualized and modified over time to best meet athletes' needs (Weinberg & Gould, 2019). Overall athlete development, health/wellbeing, and maximizing long-term development towards achieving peak performance in competition are aims of an MST program.

### ***Evaluation***

Sport psychology consultants are ethically obliged to evaluate the effectiveness of their work (Smith, 1989). Evaluating an MST program provides information on the program's efficacy and if a program has effectively achieved its goals. It enables program participants an opportunity to provide feedback for modifying a program as necessary (Weinberg & Gould, 2019; Weinberg & Williams, 2015).

### **MST for Goalies**

A broad set of mental skills have become common practice across many sport modalities. To employ the proper mental skill, it is necessary to assess, analyze and understand the demands of the sport and the athlete's position within the sport (Weinberg & Williams, 2015). The mental challenges encountered by ice hockey goalies are not dissimilar from those facing other athletes. However, these challenges are encountered in their own unique realm of ice hockey. Gelinac and Munroe-Chandler (2006) suggest that the ice hockey goalie position is one of the most demanding in team sports, and that optimal performance in the position is 90% mental. They suggest that key mental skills necessary for the position include, among others, concentration, arousal control, imagery, and self-talk. Understanding the goalie's mental challenges and how

they influence their performance is necessary to determine how to effectively address the challenges in their own unique way with each unique individual goalie.

The major mental challenges facing goalies are rooted in emotions and cognition. The mental skills used to address these challenges are emotional control, addressing nervousness, anxiety, fear, and arousal regulation; and cognitive control including thought control and attentional control. Cognitive techniques include meditation, structured breathing, self-talk, grid exercise, and practice shifting attention. Emotional control techniques include meditation, structured breathing, and progressive muscle relaxation which also involve attention/thought control.

### ***Building a Goalie MST Program***

Components of the MST program include the following, typically in order (Perna et al., 1995): Evaluation, Assessment, Identifying Goals, Individual Intervention, Cognitive Skills and Techniques, Emotional Skills and Techniques, Outcome Evaluation, Reassessing of Goals. As goals are assessed, and new goals identified, a new intervention may be applied and implemented based on the need's assessment.

### ***Obstacles to MST in Ice Hockey***

Many athletes do not use MST because they are not aware of the opportunities and benefits (Zillmer & Gigli, 2007). One reason for this is that the sport psychology profession fails to adequately address specific sports and positions (Kaufman et al., 2018). Likewise, hockey tends to be resistant to change from the establishment due to its insular culture (Reed, 2013). Head Coaches, many of them retired players, tend to lack the sport science training that provides an understanding of mental skills training. Sport psychology and MST are often conflated and confused with clinical psychology and mental illness due to this lack of understanding. This results in a lingering stigma among athletes and coaches towards MST (Martin, 2006). Many coaches are reluctant to employ the use of sport psychology consultants out of concern that they may influence their athletes (Silva, 2002). Compounding the issue, many athletes are skeptical of sport psychology as it is not traditionally a part of athletics (Zillmer & Gigli, 2007).

Weinberg and Gould (2019) note an overall increase in athletes' willingness to participate in mental training when they realize the performance benefits. The key to resolving these issues is educating athletes and coaches about the prevalence of mental challenges in ice hockey, their distinction from mental illness, and their deleterious effects on performance. This along with

education on the effectiveness of mental skills training for managing mental challenges and enhancing performance can aid in opening ice hockey to mental skills training. Steve Thompson, Director of Goaltending for USA Hockey, in a 2020 interview summed up best the national attitude towards mental skills training for goalies, emphasizing the need and desire for mental skills training (S. Thompson, personal communication, May 14, 2020).

“At our National Team Goalie Camp, we asked all of the athletes, what they felt were their biggest deficiencies and they said consistency, confidence, and mental skills. We are going to make it a goal at USA Hockey to be the first nation to make mental skills training mandatory and not just a good idea.”

This initiative by USA Hockey of requiring mental skills training is a major step in the right direction. This study contributes by identifying goalies’ mental challenges and important mental skills.

Research supports mental skills training as being beneficial for enhancing performance, however it is not readily available to athletes unless they are working (privately) with a mental skills coach and rarely are they available to hockey goalies. There is a lack of research into the most applicable mental skills targeting specific sports and positions (Kaufman et al., 2018). This further contributes to the gap in the understanding and application of mental skills. To understand the specific skills needed by the goalie we need to analyze and understand the mental challenges faced by goalies. This is not to say that goalies will use different mental skills than other athletes. It is important to determine the most effective mental skills for goalies. We will seek to identify the mental challenges by asking the goalies, themselves, and their coaches. As one of the three pillars of evidence-based practice (patient preferences), this study will ask the goalies what mental challenges they are facing and what mental skills can help them manage these, thus assessing the need in mental training resources for ice hockey goalies (Amonette et al., 2016).

### **Purpose Statement**

The purpose of this study was to identify the mental challenges that goalies face and the mental skills most needed by goalies. The findings of this research may be used to develop resources for goalies so that they can self-assess the mental challenges facing them and apply

specific mental skills training to address and manage those challenges. The specific aims of this study are:

*Aim #1: Identify the mental challenges faced by ice hockey goalies*

*Aim #2: Identify the important mental skills for goalies.*

## **Methods**

An exploratory sequential mixed methods approach was used that included the completion of an online survey with established measures as well as open-ended questions. Online focus groups and individual interviews were conducted with a sub-set of the survey participants to learn their thoughts, feelings, and perspectives of mental challenges and mental skills training.

### **Pilot Study**

In 2019 a preliminary Mental Skills Needs Assessment was conducted with 30 elite ice hockey goalies and goalie coaches who provided information on the mental challenges and mental skills needs and experiences through written surveys, individual interviews, and focus groups. Participants identified mental challenges and skills like those in literature (e.g., anxiety and performance consistency) and the combination of survey and focus groups provided rich data. Similar procedures were used in the current study. Both survey and interview guides were revised through further review and piloting, leading to the current survey, and interview questions.

### **Participants**

The target population was adult goalies and goalie coaches. They were recruited from the mailing list of participants at the Global Goaltending Retreat in Breckenridge, Colorado, (APPENDIX A), and the mailing list of all goalie coaches affiliated with USA Hockey's Goalie Nation. Participants were also recruited from responses to an article on this study in *InGoal Magazine* (Hutchison, 2020). There was a total of 115 participants (99 males and 16 females). Of the 35 goalies there were 29 males and 6 females. Of the 80 coaches there were 70 males and 10 females. All but 2 of the coaches had been goalies. There were 4 focus groups with a total of 12 participants, and 9 individual interviews.

Most coaches had played professionally or at the collegiate level. In a team structure the goalie coach represents the interface between the coaching staff and the goalie. The goalie coach is tasked by the team with adequately training and preparing the goalie. However, it is also their

responsibility to gain the goalie's trust by representing, and if necessary, advocating for, and defending the goalie's best interests to the coaching staff. As such, in the team structure, the goalie coach is also the goalie advocate. Half of the goalies were playing at collegiate or the professional level, and half were elite amateurs playing at the highest Junior levels, including in the United States Hockey League, North American Hockey League, and the Canadian Hockey League. Junior players play at an elite level, and typically advance to Division 1 NCAA teams or professional leagues in Europe and North America. The participants were from 12 countries (APPENDIX B).

### **Measures**

The survey of goalies (APPENDIX C) and goalie coaches (APPENDIX D) was administered, using Qualtrics software (Qualtrics, LLC, Provo, UT). The main sections in the survey were demographics, mental challenges, mental skills and the Athletic Coping Skills Inventory-28 (ASCI-28). Demographics included basic demographic information as well as hockey experience and experience with MST.

The Mental Challenges section included a list of 7 common challenges (Maintaining Concentration, Controlling Emotions, Recovering After Getting Scored On, Performing Consistently, Controlling Thoughts, Anxiety Nervousness & Fear, and Dealing with Negative Thoughts) with a 5-point Likert scale to rate the importance of each mental challenge from Not at All - Always. Open-ended questions asked participants to list the most important mental challenges faced by goalies.

The Mental Skills section was similar with 5-point Likert scales on the importance of 8 mental skills (Staying Focused, Controlling Thoughts, Arousal Regulation, Controlling Emotions, Using Self-Talk, Setting Goals, Using Imagery, Recovering from Failure) from Not at All - Always, as well as open-ended questions to list the most important mental skills.

The ASCI-28 is a measure of an athlete's mental skills (Smith et al., 1995). The ASCI-28 portion of the survey was not included in the coaches' survey as the focus of the study is on goalies' mental skills. ASCI-28 has been validated in studies examining correlations between ASCI-28 and other relevant measures, and is noted for its established, demonstrated reliability and validity. The ACSI-28 includes 28 items rated on a 4-point scale and yields scores on 7 subscales: Coping with adversity, Peaking under pressure, Goal setting and mental preparation,



Concentration or attentional focus, Freedom from worry, Confidence, and achievement motivation, and Coachability.

Separate semi-structured focus groups and interviews using similar scripts were conducted with goalies, and goalie coaches (APPENDIX E). Following an introduction and review of informed consent and ground rules, the researcher asked the participants about mental challenges, important mental skills, and experience with mental skills training (APPENDIX F).

### **Procedures**

Following IRB approval, participants were recruited through the email list of the 2020 Global Goaltending Retreat of national team goalies and goalie coaches from throughout the world. Participants were also recruited from the list of goalie coaches affiliated with USA Hockey. Finally, the online magazine *InGoal* published an article about this study (Hutchinson, 2020). The participants were invited to participate in an online survey administered in Qualtrics. A subset of participants was recruited for the focus groups/interviews via a Google doc link at the end of the survey. All participant identities were kept anonymous and confidential.

Participants wishing to participate in interviews or focus groups were directed to a Google form collecting their preferences to participate in an interview or focus group, and their preferred days and times. The volunteers were contacted via email to schedule interviews and focus groups. Individual interviews with 9 participants, and 4 focus groups with a total of 12 participants were conducted online via Zoom over a 3-week period from December 6 to December 23, 2020. The interview and focus group guides consisted of 14 open-ended questions about goalies' mental challenges and mental skills including greatest mental challenges, most important mental skills, and experience with MST (APPENDIX G).

### **Data Analysis**

Descriptive statistics including mean, standard deviation, and frequencies were calculated for the closed-ended survey questions. Survey data were uploaded and analyzed in Qualtrics and SPSS (version 23; IBM Corp, Armonk, NY). Recorded focus group and interview files were transcribed on Zoom. Transcribed files were sent to focus group members and interviewees for verification and member checking (Creswell, 2013a). All participants responded positively, or did not respond, indicating their acceptance of the transcript. There were no revisions made to the transcripts. Upon verification open-ended survey questions were exported into a Microsoft

Word document for open coding and analysis and combined with interview and focus group transcripts for open and axial coding, and creation of themes.

A six-stage process of thematic analysis developed by Braun and Clarke (2006) was used to analyze the qualitative data. Interview and focus group transcripts and the survey open-ended responses were read several times and reviewed repeatedly to identify descriptive words and statements that were in line with the project aims. Open coding was begun by organizing repetitive words and related statements that the participants used to describe their greatest mental challenges and most important mental skills. These were used to begin to develop concepts from within the participants' expressions. This resulted in 66 codes, words & statements, that best described the ideas expressed by the participants within the aims of the project (APPENDIX H). This was done by using an integrated approach of inductive and deductive analysis to identify descriptive components. These were semantically organized and summarized to interpret and understand the significance of patterns, their meanings, and their implications with relation to the project's aims, and the possibility of latent themes influencing the data was taken into consideration (APPENDIX I).

The interview and survey transcripts were uploaded to Atlas.ti (ATLAS.ti 9 Windows), along with the codes for axial coding and detection of the themes within the transcripts. (Marshall, & Rossman, 2016). The researcher collaborated with a colleague, working together to develop themes from the 66 codes. Following discussion and comparison of the most accurate descriptive terms, 6 themes were agreed upon that best described each semantic grouping, and further refined following discussion with the dissertation committee chairperson: Staying in the Present Moment, Competitive Attitude, Confidence, Self-Improvement, Anxiety/Doubt, and Self-Assessment (Bloomberg & Volpe, 2016). The researcher read and reviewed the transcripts multiple times to grasp the inherent meanings of the participants' statements. The coded data were further analyzed in Atlas.ti five times to refine and grasp the deeper meanings of the transcripts. The data were transferred to Excel (Microsoft Corporation, 2021) spreadsheets for further analysis of frequencies of stated terms and concepts. The discussion of challenges and skills in the interviews and focus groups was quite amorphous, with far more discussion of mental challenges because the participants apparently didn't know as much about mental skills (the researcher had to be very careful not to prompt them). As such, it was challenging and

laborious discerning the skills in the transcripts, which had to be “teased out” of the transcripts as if with a comb.

It was important for the researcher to understand the influence of his own experiences as a goalie, goalie coach, and sport psychology consultant working with goalies which could influence the interpretation of the participant’s statements. It was necessary for the researcher to step out of his past roles, and to approach the transcripts with the attitude of a researcher and not the intrinsic bias of a goalie and coach. Still, it could not be avoided entirely, and the precautions taken to avoid bias are addressed under Researcher Positionality. The methodology, analysis, and coding of the data, as well as thematic development was shared and discussed with a colleague for peer debriefing and to establish intercoder reliability as evidence of trustworthiness (Creswell, 2013).

### **Researcher Positionality**

This project is evidence based, with the literature review representing the body of scholarly knowledge, the research component representing the client’s needs and desires, and the data analysis and conclusions representing the researcher’s professional expertise. It was necessary for the researcher to recognize his position and biases and take steps to limit those. The research process is affected by a researcher’s opinions and biases at a project’s every stage (Coghlan & Brydon-Miller, 2014). The researcher’s experience as a goalie, goalie coach, assistant head coach, mental skills coach, and sport psychology consultant provide much rich experience and many viewpoints on mental skills training for goalies that contribute to this study. To address any concerns of bias a researcher positionality statement has been included in Appendix I. The researcher states that they must be conscious of and avoid their biases in this study. In fact, in mental skills training, self-awareness is the first step. This study is not about the researcher’s experience as a sport psychology consultant, or even as a goalie. The researcher’s role is to guide and facilitate the study as an example of evidence-based practice. In this way the researcher utilizes the relevant current scholarly literature (Literature Review), the needs of the goalie community acted on as the study’s research and data analysis (Patient’s Preferences), and then in summarizing, disseminating, and acting on the results of the research based on the researcher’s professional experience. Approaching this study as an Evidence-Based Project helps to control the researcher’s bias and maintain integrity. Acknowledgement of bias is necessary to ensure trustworthiness (Amonette & Thomas, 2017) (APPENDIX J).

## Results

This project sought to identify the greatest mental challenges faced by ice hockey goalies, and the most important mental skills for goalies. This was done using surveys closed and open-ended questions, and interviews & focus groups. Because all but 2 of the coaches had been goalies, many at elite levels, their perspectives were like those of the goalie participants in the survey and the interviews and focus groups.

### Survey Results

All the goalies and coaches rated all the challenges highly, and almost no one responded on the lower end. This is an indication of how seriously the participants regard the challenges they face. All are rated high – with average ratings around 4 (a lot). While originally anticipating seeing the greatest mental challenges, what we find is that goalies recognize and rate all of the mental challenges as very important (Table 1).

**Table 1. Survey Ratings of Mental Challenges**

Frequency		Not at all		A little		Moderately		A lot		Almost Always		M	
Goalies	Coaches	G	C	G	C	G	C	G	C	G	C	G	C
Maintaining focus or concentration		1	-	4	6	9	18	10	29	10	26	3.71	3.95
Controlling emotions		1	1	3	5	8	17	18	36	4	20	3.62	3.87
Recovering after getting scored on		-	-	2	1	8	19	20	39	4	20	3.76	3.99
Performing consistently		-	-	1	-	5	13	20	28	8	38	4.03	4.32
Controlling thoughts		1	-	2	2	6	15	15	30	10	32	3.91	4.16
Anxiety, nervousness, or fear		1	-	3	4	10	29	17	23	3	23	3.53	3.82
Dealing with negative thoughts		1	-	-	3	8	19	20	34	5	23	3.82	3.97

Goalies n=34, Coaches n=79, 1-5 scoring

Likewise, both goalies and coaches were in close agreement on every category of mental skills with all the participants rating the skills highly, and almost no one on the low end. All

mental skills were rated as important – with staying focused and recovering from failure nearly all *strongly agree* (Table 2).

Table 2. Survey Ratings of Mental Skills

Frequency		Strongly disagree		Somewhat disagree		Neither agree nor disagree		Somewhat agree		Strongly agree		M	
Goalie	Coach	G	C	G	C	G	C	G	C	G	C	G	C
Staying focused		-	-	-	-	-	-	4	11	30	66	4.88	4.86
Controlling thoughts		-	-	-	-	1	1	7	16	26	60	4.74	4.77
Arousal regulation		-	-	2	-	18	1	12	33	11	26	3.97	4.10
Controlling emotions		-	-	-	-	1	3	12	23	21	51	4.59	4.62
Using self-talk		-	-	1	-	5	11	17	21	11	45	4.12	4.44
Setting goals		-	-	-	1	3	9	15	27	16	40	4.38	4.38
Using imagery		-	-	-	1	5	6	16	31	13	39	4.24	4.40
Recovering from failure		-	-	-	-	1	3	4	9	29	65	4.82	4.81

Goalies n=34, Coaches n=79, 1-5 scoring

*The Athletic Coping Skills Inventory-28 (ACSI-28)* is an assessment for measuring an athlete’s psychological skills, developed by Smith et al. (1994). Only the goalie participants took the ACSI-28. The goalie participants’ ACSI-28 scores were very high, many at the highest possible and none at the lowest. The highest mean scores were Coachability and Confidence & Achievement Motivation. The lowest mean scores were for Goal Setting & Mental Preparation and Freedom from Worry (Table 3). While these scores are very high it does not mean that the goalies would not benefit from mental skills training. Nine of the 34 goalies had previously worked with a sport psychology consultant. The scores in Coachability and Confidence & Achievement Motivation do indicate a potential openness or willingness to engage in mental skills training. Mental skills are all considered important – and training can improve even highly developed skills (just as goalies regularly practice physical skills).

Table 3. ACSI-28 Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Coping with Adversity	7	15	11.41	1.88
Coachability	8	16	13.71	2.05
Concentration	9	16	12.26	1.83
Confidence and Achievement Motivation	11	16	13.41	1.46
Goal Setting and Mental Preparation	5	16	11.26	3.19
Peaking Under Pressure	7	16	12.85	2.42
Freedom from Worry	6	15	10.62	2.31

n=34, The possible range is 4-16 (4 items each with 1-4 scoring)

*Survey Open-Ended Responses* were grouped, coded, and themed with the interview and focus group responses. Several challenges and skills were cited. Anxiety/doubt comes through in all – and so do staying present, competitive attitude and confidence – although not quite as much – with fewer citing of self-skills. (Table 4).

Table 4. Survey Open-Ended Responses & Interview/Focus Group Mental Challenges & Mental Skills

<b>Survey Open-ended Responses</b>	Staying in the Present Moment	Competitive Attitude	Anxiety/Doubt	Confidence	Self-Awareness	Self-Improvement
<b>Challenges</b>	22	33	51	21	1	4
<b>Skills</b>	23	3	18	5	1	7
<b>Interview &amp; Focus Group</b>	Staying in the Present Moment	Competitive Attitude	Anxiety/Doubt	Confidence	Self-Assessment	Self-Improvement
<b>Challenges</b>	529	414	549	223	86	181

Frequency

Themes of Self-Improvement and Self-Assessment were composed of descriptive codes related to mental skills discussed in the interviews and focus groups. The most frequently cited codes in the transcripts suggest the participants' most important mental skill was Self-Assessment (Table 5).

Table 5. Interview & Focus Group Mental Skill Codes

Mental Skills	Anchors	Self-Assessment	Self-Awareness	Breathing	Online Learning	In-Person Learning
Frequency	10	41	3	23	3	5
Self-Talk	Goalsetting	Journaling	Meditation	Mindfulness	Centering	Relaxation
17	2	14	12	5	6	3

### Challenge-based Themes

*Anxiety/Doubt* is composed of the codes: doubt, stress, worry, nervousness, anxiety, fear, fault, mistake, failure, disgust, imposter, results, and parents. A goalie’s primary responsibility is to prevent goals from being scored on their team. However, goals will be scored, as it is the nature of ice hockey. Goalies interpret this inevitable goal being scored as a failure as indicated in this sample of open-ended responses.

“The fear of failure. The fear of letting your team down, letting your coach down. My biggest fear is that I will underperform.”

“In the same dressing room, there's a lot of pride going on there. So (a loss) is tough. It's a tough loss when it comes, and when you know it's your fault.”

“You know the imposter kind of thing of struggling with those thoughts of do I belong here, am I good enough?”

*Staying in the Present Moment* is composed of the codes: controlling thoughts, short memory, distraction, preparation, focus, recovery, and reset. The open-ended responses give an indication of this theme’s importance.

“When you constantly have those thoughts flowing through your mind of what happens if I let in this goal, and, you know, oh my God, there's six minutes left in the game. Can we make it six minutes without getting scored-on?”

“It's hard not to think about why I want to win this game and you know your mind wandering to a place that's really not relevant because if we're worrying about that I think we will start losing focus on what is happening in the now.”

“One of the reasons why I love goaltending is that it is a very focused.”

*Confidence* is composed of the codes: belief, caring, trust, enjoyment, connection, culture, self-confidence, self-efficacy, self-esteem, responsibility, motivation, and identity. Confidence is critical to success. Coaches commonly say that they would rather have a confident goalie with weaker skills than a technically superior goalie with no confidence.

“I think confidence is probably the biggest struggle that most goalies have.”

“Confidence and consistency kind of go hand in hand.”

“Self-belief was more powerful than self-doubt. I could quiet the self-doubt, quiet the lack of confidence.”

*Competitive Attitude* is composed of the codes: attitude, challenges, competitiveness, consistency, adversity, pressure, resilience, feeling alone, and isolation. These are qualities that contribute to a goalie’s competitiveness.

“The most crucial thing, a goalie needs, is just overall competitiveness.”

“That mental pressure of being the center of attention, and asking, do I belong?”

“For me, that always carried a lot of pressure, just that you are on an island within a team.”

### **Skill-based Themes**

*Self-Improvement* is composed of the codes: self-assessment, self-critique, self-reflection, self-talk, routine, habits, goalsetting, journaling, in-person, and online. As the theme states, these characteristics deal with improvement and skill-building. This theme encompasses nearly all codes related to mental skills.

“I kind of went the full arc of it from my first reaction to the coach kind of saying, “hey, you know, I want you to see a sports psychologist, I think it would be beneficial.” Of kind of being, you know, drawing back and saying, “what like mental training?” “Come on,” like, “I don't need to have that.” Then coming full circle having done some relaxation and visualization to learning meditation to kind of feeling almost like this was my advantage that I had over other players. Because I found this tool, or this tool found me.”



“I think the positive self-talk is important because negative self-talk just tears you down. But the positive self-talk will build you up and it'll help you move on faster from maybe a bad practice or a bad game.”

*Self-Assessment* is composed of the codes: mindfulness, meditation, breathing, centering, anchors, relaxation, and comfortable. Self-Assessment enables the goalie to determine what is impacting their performance and respond accordingly. The value of these is reflected in the participants open-ended responses. Assessment is the first step in an MST program that enables the goalie and the mental skills coach to determine the goalie’s needs. It’s even more valuable when a goalie can self-assess their situation to constructively adapt and employ the proper mental skills to manage their current situation. This is the goal of MST.

“The most important mental skills are competitiveness and self-assessment.”

“That open mindedness tool, assessment tool, and learning how to mentally prepare yourself for a game to find your “zone” consistently.”

“When you assess and go back and think about being able to do it. A good mental skill is the ability to assess your performance and so to say, did I do a good job? Yeah, I did a good job. I did everything that I was supposed to do”

### Conclusion

The purpose of this study was to determine the mental challenges faced by goalies, and to identify mental skills important to goalies; the main findings are summarized in Table 6.

Table 6. Goalies’ Most Cited Mental Challenges & Skills

Project Source	Mental Challenges	Mental Skills
Survey Closed Questions	Performing Consistently Controlling Thoughts	Staying Focused
Survey Open-ended Questions	Anxiety/Doubt	Staying in the Present Moment
Interviews & Focus Groups	Anxiety/Doubt	Self-Assessment

One aim of the study is to identify the challenges that goalies face. It is the goalie’s context that is unique, similar to that of a baseball pitcher in his sport. The goalie’s position is unique to a hockey team in that the goalie does everything differently with specific

responsibilities that are different from the rest of the team. This in itself sets the goalie apart from the team and leads to mental challenges being compounded.

In the surveys, participants rated all mental challenges and mental skills highly. Almost everyone chose *agree/strongly agree* for all of the mental skills and *a lot/always* for how often each of the listed challenges was a challenge for most goalies. Almost no one responded at the lower end. This indicates a strong awareness of the mental challenges facing goalies, and a desire for the mental skills that can assist in managing these challenges.

The most-often reported mental challenges of performing consistently, controlling thoughts, and anxiety/doubt are rooted within the area of Cognitive Control. That is, by controlling their runaway thinking, goalies also manage their anxiety and doubt and perform consistently.

The mental skills of staying focused, staying in the present moment, and self-assessment are, likewise, part of Cognitive Control, and address these challenges. It is interesting, but understandable that goalies experience more thought-related mental challenges. The goalie's thought dwelling on the last goal scored removes a degree of their attention from the game at hand, making them more susceptible to being scored on again. Another goal contributes to the goalie experiencing a fear of failure further diminishing their attentional focus. Further goals being scored on them results in the goalie worrying about the coach pulling them from the game or letting down their team – a further distraction. This cascade of increasing thought, worry and fear typically results in poor performance and the goalie's diminished self-efficacy.

The interview findings confirm that goalies experience most mental challenges, and the most cited challenges require cognitive control skills to manage. However, far fewer interview participants discussed mental skills. Apparently, goalies know the challenges they face but are less aware of the mental skills to manage them. These findings enable the development of MST programs targeted to the specific needs of ice hockey goalies.

## CHAPTER II: DISSEMINATION

Dissemination of the findings will be made to the international goalie and goalie coaching communities that participated in and supported the study. This will be done through a presentation at the Global Goaltending Retreat (GGR) in Breckenridge, Colorado during the first week of June 2021. The presentation will feature a PowerPoint presentation discussing the study's aims. The study's surveys, interviews and focus groups will be covered, and data presented displaying the greatest mental challenges, and the desired mental skills. Also discussed will be mental skills and techniques to address the mental challenges (APPENDIX K).

### **Presentation Script**

Slide 1: Title. Hello. My name is Ted Monnich. I am a mental skills coach, and a doctoral graduate of the Department of Kinesiology at the University of North Carolina at Greensboro, a retired goalie, assistant head coach, longtime goalie coach, and a sport psychology consultant. My research has been about determining the mental challenges faced by ice hockey goalies, and the mental skills to address them.

Slide 2: Introduction. In this study we collected data from ice hockey goalies and goalie coaches from several North American and European amateur, national, university, and professional men's and women's teams. Goalies and their coaches provided information on the mental challenges and mental skills needs and experiences through online surveys, focus groups, and interviews.

Slide 3: Mental Skills. Mental skills allow athletes to enhance productive mind/body states, and control unproductive mental states, thus enabling them to perform at their best. The main mental skills common to all MST programs involve cognitive control, which involves controlling thoughts and attention, and emotional control, which involves controlling arousal and related thoughts.

Slide 4: Mental Skills Training. There are several key components to an MST program: Assessment of the athlete's needs (profiling, monitoring), Education of the athlete (gain buy-in, set expectations), Mental skill acquisition (practice/development), Transferring/using the mental skill in a sport setting, and finally Evaluation of the athlete's successful understanding and application of the skill.

Slide 5: MST for Goalies. The major mental challenges facing goalies are rooted in emotions and cognition. The mental skills used to address these challenges are emotional control, addressing nervousness, anxiety, fear, and arousal regulation; and cognitive control including thought control and attentional control. Cognitive techniques include meditation, structured breathing, self-talk, grid exercise, and practice shifting attention. Emotional control techniques include meditation, structured breathing, and progressive muscle relaxation which also involve attention/thought control.

Slide 6: Obstacles to MST in Ice Hockey. Many athletes do not use MST because they are not aware of the opportunities and benefits. One reason for this is that the sport psychology profession fails to adequately address specific sports and positions. Likewise, hockey tends to be resistant to change from the establishment due to its insular culture. Sport psychology and MST are often conflated and confused with clinical psychology and mental illness due to this lack of understanding. Weinberg & Gould (2019) note an overall increase in athletes' willingness to participate in mental training when they realize the performance benefits.

Slide 7: Purpose Statement. The purpose of this study was to identify the mental challenges that goalies face and the mental skills most needed by goalies. The findings of this research may be used to develop resources for goalies so that they can self-assess the mental challenges facing them and apply specific mental skills training to address and manage those challenges.

Slide 8: Methods & Participants. There was a total of 115 participants (99 males and 16 females). Of the 35 goalies there were 29 males and 6 females. Of the 80 coaches there were 70 males and 10 females. There were 4 focus groups with a total of 12 participants, and 9 individual interviews. Almost half of the goalies were playing at collegiate or professional levels and half were amateur. The participants were from 12 countries.

Slides 9-10: Measures. The surveys mental challenges and mental skills sections included a list of 7 common challenges and skills on a 5-point scale. The survey included the ASCI-28 as a measure of the athlete's mental skills. Focus groups and interviews using similar scripts were conducted with goalies, and goalie coaches asking the participants about mental challenges, important mental skills, and experience with mental skills training.

Slide 11: Athletic Coping Skills Index-28. ACSI-28 is an assessment for measuring an athlete's psychological skills. Only the goalie participants took the ACSI-28. The participants'

scores were very high, many at the highest levels possible, and none at the lowest. The highest mean scores were Coachability and Confidence & Achievement Motivation. The lowest mean scores were for Goal Setting & Mental Preparation and Freedom from Worry.

Slides 12-15: Results. In the survey's closed-questions goalies and coaches expressed that the greatest mental challenges are Performing Consistently,

“I guess there's been kind of some inconsistency when I've had been going through mental difficulties and it's not as much now, but in the past or in recent years with some of the mental challenges I've faced I've shown a lot of inconsistency in practice like I'll be kind of in my zone one game or one practice. And then the next. It's like it's a different goalie.”

and Controlling Thoughts. These rated highly in the survey and in the preliminary study.

“It's hard not to think about why I want to win this game and you know your mind wandering to a place that's not really relevant because if we're worrying about that. I think we will start losing focus on what is happening in the now.”

The most frequently cited mental skills are Staying Focused and Recovering from Failure. The greatest mental challenge themes, in the surveys and interview & focus groups, were Fear of Failure,

“The fear of failure. The fear of letting your team down, letting your coach down. My biggest fear is that I will underperform.”

and Staying in the Present Moment.

“It's hard not to think about why I want to win this game and you know your mind wandering to a place that's really not relevant because if we're worrying about that I think we will start losing focus on what is happening in the now.”

The most important mental skill theme was Self-Improvement.

“I kind of went the full arc of it from my first reaction to the coach kind of saying, hey, you know, I want you to see a sports psychologist, I think it would be beneficial. Of kind of being, you know, drawing back and saying

what like mental training? Come on, like, I don't need to have that. Then coming full circle having done some relaxation and visualization to learning meditation to kind of feeling almost like this was my advantage that I had over other players. Because I found this tool, or this tool found me.” I think what is really important here is that we have come to realize that goalies struggle with their thoughts, and thinking, and worrying about a lot of things when they should be in the present moment, just focusing on the next shot.”

Slide 16: Conclusion. We can conclude from this study that mental challenges are a regular part of a goalie's experience. And, that goalies are quite aware of the mental challenges that they face. We have also learned that goalies are not as aware of the mental skills and techniques to manage their mental challenges. As such, a primary consideration, moving forward, must be education, for goalies and coaches, in the mental skills to manage mental challenges. The study found that the greatest mental challenges faced by goalies are control of thoughts and staying in the present moment. Participants also expressed the importance and need for consistent performance by goalies. The study found that the most important mental skills, considered by goalies, are staying focused and recovering from failure. These mental skills contribute to achieving consistent performance. Again, we conclude that goalies face more thought-based mental challenges, and these distract the goalie from putting 100% of their focus on the next shot. How do we manage this? We must first become aware of what our mind is doing through the practice of meditation. We can then cultivate our ability to self-assess the situation and determine what is the challenge, what is the problem. Is there even a problem? It might just be managing our thoughts in order to focus on the next shot.

### CHAPTER III: ACTION PLAN

Educating goalies about their mental challenges and the mental skills to manage those challenges is the primary follow up to this study. Education about MST is key to dispelling misconceptions about the training, and for cultivating acceptance. As has been noted, when players begin experiencing success as a result of MST, those around them take notice and follow. An evidence-based curriculum should be established that follows the MST program model discussed in Chapter 1, including goalie assessment, education, practice, and evaluation.

Knowledge, of the goalies' fundamental mental challenges and the MST necessary to manage those challenges, acquired in this study, will contribute to the development of an evidence-based MST program for goalies. The program can then be modified and disseminate as a book, manual, online, or smart phone app. The goal is to provide goalies with an accessible usable tool with which they can self-assess the mental challenges that they are facing and determine appropriate mental skills to develop and apply for managing the mental challenges that they encounter in their position.

A book focusing on mental skills training for goalies is in development with the current findings serving as its core. The researcher-cum-author will work with veteran professional goalies to share how MST has contributed to successful performance in their career. This study will serve as a foundation for the book. The study's results provide a direction: Goalies are aware of their mental challenges, but not of the mental skills to manage them. Most of their challenges involve learning to control their thoughts and thinking. Of course, emotions are part of a goalie's challenges and they too will be addressed. The concept for the book is to provide a resource directly to goalies with which they can learn to cultivate awareness of their experience of their mental challenges, and the skills, and how to apply them, to manage the challenges.

In the coming year the researcher will present on MST awareness, usage and techniques in lectures, workshops, and training camps, focusing on raising awareness of MST, and of the mental skills and techniques available to goalies. Articles, podcasts and webinars, distributed through *InGoal Magazine*, NHL.com, and USA Hockey Goalie Nation will focus on raising awareness of MST for goalies, and a focus on Cognitive Control topics, mental challenges, and mental skills applicable to managing thoughts and thinking. Training programs will target raising

self-awareness through mindfulness and meditation practices. These will then be extended to focusing on cultivating self-assessment skills to further manage thoughts and thinking.

*InGoal Magazine*, which published an article promoting this study, has requested that the researcher write a series of articles, featuring one overview article, with follow-up on specific skills or ways to deal with specific common challenges. This provides an opportunity to address the entire goaltending community and create further awareness of the study and its findings about MST and the specific mental skills utilized to manage the goalie's mental challenges.



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## APPENDIX A: EMAIL RECRUITMENT LETTER

Dear Goalie (or Goalie Coach):

My name is Theodore Monnich. I am a doctoral candidate in the Department of Kinesiology at the University of North Carolina at Greensboro. I am a goalie, goalie coach, and sport psychology consultant, and mental skills coach for USA Hockey, researching the mental challenges faced by goalies in order to develop better resources for goalies to manage the mental challenges inherent in their game.

I am inviting you to participate in this brief online survey (commitment time: 30 minutes or less) about the mental challenges facing ice hockey goalies, and the mental skills to manage those challenges based on your experience as a goalie or goalie coach, and our mutual involvement with the Global Goaltending Retreat in Breckenridge, Colorado.

After completing the survey, you will have the opportunity volunteer to participate in an online focus group or interview, via Zoom, about mental challenges facing ice hockey goalies, and the mental skills to manage those challenges (commitment time: one hour).

Theodore Monnich, M.S.

Doctoral Candidate

Department of Kinesiology

University of North Carolina at Greensboro

## APPENDIX B: PARTICIPANT DEMOGRAPHICS

### Age of Survey Participants in Years

Age	18-20	21-25	26-30	31-40	41-50	>50
Goalies	1	7	7	20	-	-
Coaches	-	6	12	22	23	17

### Race/Ethnicity of Survey Participants

Race/Ethnicity	Hispanic	Middle Eastern	White	Asian	White/African American	Mixed
Goalies	1	1	31	1	-	1
Coaches	1	-	76	1	2	-

### Nationality of Goalies in Survey

Austria	Canada	Finland	Russia	USA	Other
1	5	3	1	23	3

### Nationality of Coaches in Survey

Britain	Canada	Can/USA	Czech	Estonia	Germany
2	20	1	1	1	1
Iceland	Norway	Switzerland	Sweden	USA	
1	1	1	1	49	

### Experience of Survey Goalies & Coaches

Years Playing & Coaching	1-5 years	6-10 years	10-15 years	> 15 years
Goalies	16	4	4	10
Coaches	15	7	10	31

**Experience with Mental Skills Coach/Sport Psychology Consultant**

Experience	Currently	None	1-2 Sessions	<Year	>Year
Goalies	9	25	7	7	16
Coaches	18	61	26	12	8

**Levels of Coaching in Survey (Several coached at multiple levels)**

Amateur	Junior	Men's College	Women's College	Men's Pro	Women's Pro	Privately
50	35	14	8	11	6	62

**Coaches' Playing Experience as a Goalie**

Never a Goalie	1-5 Years	6-10 Years	>10 Years
2	1	7	70
Amateur	Junior	Collegiate	Professional
10	13	34	21

**Interview Participant Subset**

Interviews	1	2	3	5	5	6	7	8	9
Goalie	F	F	M	-	-	-	-	-	-
Coach	-	-	-	F	M	M	M	M	M
Level	Pro	College	Pro	Pro	Pro	Pro	Amateur	Amateur	Amateur

**Focus Group Participant Subset**

Focus Groups	1	2	3	4
Goalie	2	1	2	-
Coach	2	3	-	2
N Total	4	4	2	2

## APPENDIX C: GOALIE SURVEY

### INTRODUCTION

An ice hockey goalie is a unique position, fraught with many mental challenges. All goalies experience this and can use mental skills to manage these mental challenges and to improve their performance. This survey asks for your thoughts and feelings about the mental challenges that goalies face, and your thoughts and feelings about using Mental Skills and Mental Skills Training.

Please provide some information about yourself.

What is your Gender?

- Male (1)
- Female (2)
- Other/self-describe (4) \_\_\_\_\_

What is your Age?

- 18-20 (1)
- 21-25 (2)
- 26-30 (3)
- over 30 (4)

What is your Race/Ethnicity?

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic (6)
- Other/self-describe (7) \_\_\_\_\_

What is your Nationality?

- Austria (8)
- Canada (11)
- Czech Republic (12)
- Finland (15)
- Germany (17)
- Russia (24)
- Slovak Republic (25)
- USA (29)
- Other nationality (please write in) (32)

---

Current level that you are playing at?

- Recreational (4)
- Junior (5)
- Collegiate (6)
- Professional (7)

How many years have you been playing at this level?

- 1 - 5 years (4)
- 6 - 10 years (5)
- 10 - 15 years (6)
- More than 15 years (7)

### MENTAL CHALLENGES FACED BY GOALIES

The following items ask about mental challenges that goalies face. For each item rate how much you believe that it is a challenge for MOST goalies: Not at all (1), A little (2), A moderate amount (3), A lot (4), Almost Always (5)

- Maintaining focus or concentration (1)
  - Controlling emotions (3)
  - Recovering after getting scored on (4)
  - Performing consistently (5)
  - Controlling thoughts (6)
  - Anxiety, nervousness, or fear (7)
  - Dealing with negative thoughts (8)
- What other mental challenges do you believe have an impact on a goalie? Please list any other mental challenges that you believe are important.

---

What do you believe is the MOST important mental challenge for most goalies?

---

## MENTAL SKILLS

Mental skills training refers to the systematic and regular practice of mental or psychological skills, such as emotional control, arousal regulation, or mindfulness practice, to enhance performance, increase enjoyment, and achieve greater sport satisfaction. Mental skills are often taught by a mental skills coach. This section asks about your experience with mental skills and working with a mental skills coach or sport psychologist.

- Do you currently work with a mental skill coach or sport psychology consultant?
  - Yes (1)
  - No (2)
- Skip To: QID12 If Do you currently work with a mental skill coach or sport psychology consultant? = No
  - How long have you been working with your current mental skill coach or sport psychology consultant?
    - 1-2 sessions (1)
    - several sessions over a year (2)
    - more than 1 year (3)

- Have you worked with a mental skills coach or sport psychology consultant in the past? – if yes, how often
  - No, not at all (15)
  - 1-2 sessions (16)
  - several sessions over a year (17)
  - more than 1 year (18)

The following items ask about mental skills that goalies might use. For each item rate how much you believe that each concept or skill is important for MOST goalies: Strongly disagree (44), Somewhat disagree (45), Neither agree nor disagree (46), Somewhat agree (47), Strongly agree (48)

- Staying focused (5)
- Controlling thoughts (6)
- Arousal regulation (1)
- Controlling emotions (8)
- Using self-talk (3)
- Setting goals (7)
- Using imagery (9)
- Recovering from failure (10)

Please list any other mental skills that are important for most goalies.

---

What do you believe is the MOST important mental skill for goalies?

---

Thank you for completing this Survey on mental skills training for goalies. As a follow-up, we will be conducting brief online focus groups and interviews with goalies and coaches about their experiences with mental skills. If you are interested in participating in these focus groups or interviews please go to the link below to enter your contact information. We will contact you to schedule focus group interviews.

## APPENDIX D: GOALIE COACHES SURVEY

### INTRODUCTION

An ice hockey goalie is a unique position, fraught with many mental challenges. All goalies experience this and can use mental skills to manage these mental challenges and to improve their performance. This survey asks for your thoughts and feelings about the mental challenges that goalies face, and your thoughts and feelings about using Mental Skills and Mental Skills Training.

Please provide some information about yourself.

What is your Gender?

- Male (1)
- Female (2)
- Other/self-describe (4) \_\_\_\_\_

What is your Age?

- 18-20 (1)
- 21-25 (2)
- 26-30 (3)
- 31-40 (4)
- 41-50 (5)
- over 50 (6)

What is your Race/ethnicity?

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic (6)
- Other/self-describe (7) \_\_\_\_\_

**What is your Nationality?**

- Austria (8)
- Canada (11)
- Czech Republic (12)
- Finland (15)
- Germany (17)
- Russia (24)
- Slovak Republic (25)
- USA (29)
- Other nationality (please write in) (32) \_\_\_\_\_

Current levels that you are coaching at? You may select more than one.

- Recreational (4)
- Junior (5)
- College men's team (6)
- College women's team (7)
- Professional men's team (9)
- Professional women's team (10)
- Private coach (11)

How many years have you been coaching goalies?

- 1 - 5 years (4)
- 6 - 10 years (5)
- 10 - 15 years (6)
- More than 15 years (7)

How many years did you play as a goalie?

- None, I was never a goalie (1)
- 1 - 5 years (2)

- o 6 - 10 years (3)
  - o More than 10 years (4)
- Skip To: QID6 If How many years did you play as a goalie? = None, I was never a goalie  
What was the highest level that you played as a goalie?
- o Recreational (1)
  - o Junior (2)
  - o Collegiate (3)
  - o Professional (4)

#### MENTAL CHALLENGES FACED BY GOALIES

The following items ask about mental challenges that goalies face. For each item rate how much you believe that it is a challenge for MOST goalies: None at all (1), A little (2), A moderate amount (3), A lot (4), Almost Always (5)

- Maintaining focus or concentration (1)
  - Controlling emotions (3)
  - Recovering after getting scored on (4)
  - Performing consistently (5)
  - Controlling thoughts (6)
  - Anxiety, nervousness, or fear (7)
  - Dealing with negative thoughts (8)
- What other mental challenges do you believe have an impact on a goalie? Please list any other mental challenges that you believe are important.

---

What do you believe is the MOST important mental challenge for most goalies?

---

#### MENTAL SKILLS

Mental skills training refers to the systematic and regular practice of mental or psychological skills, such as emotional control, arousal regulation, or mindfulness practice, to enhance performance, increase enjoyment, and achieve greater sport satisfaction. Mental skills are often taught by a mental skills coach. This section asks about your experience with mental skills and working with a mental skills coach or sport psychologist.

Do you currently work with a mental skill coach or sport psychology consultant?

- o Yes (1)
  - o No (2)
- Skip To: QID12 If Do you currently work with a mental skill coach or sport psychology consultant? = No

How long have you been working with your current mental skill coach or sport psychology consultant?

- o 1-2 sessions (1)
  - o several sessions over a year (2)
  - o more than 1 year (3)
- Have you worked with a mental skills coach or sport psychology consultant in the past? – if yes, how often
- o No, not at all (15)
  - o 1-2 sessions (16)
  - o several sessions over a year (17)
  - o more than 1 year (18)

The following items ask about mental skills that goalies might use. For each item rate how much you believe that each concept or skill is important for MOST goalies: Strongly disagree (1), Somewhat disagree (2), Neither agree nor disagree (3), Somewhat agree (4), Strongly agree (5)

- Staying focused (5)
- Controlling thoughts (6)
- Arousal regulation (1)
- Controlling emotions (8)
- Using self-talk (3)
- Setting goals (7)
- Using imagery (9)
- Recovering from failure (10)

Please list any other mental skills that are important for most goalies.

---

What do you believe is the MOST important mental skill for goalies?

---

---

Thank you for completing this Survey on mental skills training for goalies. As a follow-up, we will be conducting brief online focus groups and interviews with goalies and coaches about their experiences with mental skills. If you are interested in participating in these focus groups or interviews please go to the link below to enter your contact information. We will contact you to schedule focus group interviews.



## APPENDIX E: FOCUS GROUP GUIDE

### **My Introduction**

- My name is Theodore Monnich. I am a doctoral candidate at the University of North Carolina at Greensboro. I am a former goalie and goalie coach, and I am a sport psychology consultant researching mental skills training for ice hockey goalies.
- The purpose of this focus group is to follow up the survey and gather more insight into the mental challenges that goalies face and the mental skills most needed by goalies. The findings of this research may be used to develop resources for goalies so that they can self-assess the mental challenges facing them and apply specific mental skills training to address and manage those challenges.
- Read the attached Consent documents, and display on a shared screen in Zoom, to the participants and ask if anyone has any questions?

Just a few ground rules to help the process go smoothly.

- Participation in the focus group is voluntary.
  - It's all right to abstain from discussing specific topics if you are not comfortable.
  - All responses are valid—there are no right or wrong answers.
  - Please respect the opinions of others even if you don't agree.
  - Try to stay on topic so that we can cover all the material.
  - Speak as openly as you feel comfortable.
  - Everything said in the focus group is confidential. Do not discuss details outside the group.
  - The session will be recorded and transcribed. Names will be removed to preserve confidentiality. You will be sent a transcript for review later.
- Any questions before we begin?

### **Participant Introductions**

Please use your 1st name only or you may use a pseudonym. In order to protect everyone's privacy do not use any names during the interview.

Please take a moment to introduce yourselves and, tell us a little bit about your experience as a goalie or goalie coach.

#### **Topic 1: Perceptions of mental challenges facing goalies**

The position of goalie in the sport of ice hockey is a unique solo position on a team that comes with its own unique set of mental challenges. The goalie's job is to prevent goals from being scored on their team, but goals will be scored. When goalies inevitably are scored on, they must manage the ensuing mental challenges such as emotional control and loss of self-confidence.

Question 1: What mental challenges do goalies most frequently experience?

Follow up question: What mental challenges do you, as a goalie, experience?

Follow up question: Which ones have most impact/effect on goalies; and how do any of these affect performance/game?

Question 2: How has a mental challenge affected your game, your performance?

Question 3: Anything else about mental challenges before we move on to mental skills, and dealing with challenges?

Transition Question: How do you or other goalies deal with these mental challenges that we have discussed?

**Topic 2: Perceptions of Mental Skills**

Mental skills enable an ice hockey goalie to deal with challenges. A mental skill is a learned skill that can be practiced and developed. The most common mental skills Mental Skills Training programs involve attention control, thought control, and emotional control skills.

Question 1: What are important mental skills for a goalie?

Follow up: What are the top 3 most important mental skills? Why?

Question 2: Do you have any experience with mental skills training?

Question 3: How common is MST goalies?

Follow up: Why or why not?

Question 5: What kinds of mental skills training would you or most goalies want?

Follow up: What skills, how delivered, what would make MST more attractive to you or other goalies.

Final Question: Is there anything you'd like to add about mental challenges or MST in hockey or specifically for goalies?

## APPENDIX F: INTERVIEW & FOCUS GROUP CONSENT

Research studies are designed to obtain new knowledge. This new information may help people in the future. There may not be any direct benefit to you for being in the research study. There also may be risks to being in research studies. If you choose not to be in the study or leave the study before it is done, it will not affect your relationship with the researcher or the University of North Carolina at Greensboro. Details about this study are discussed in this consent form. It is important that you understand this information so that you can make an informed choice about being in this research study.

If you have any questions about this study at any time, you should ask the researchers named in this consent form. Their contact information is below.

### **What is the study about?**

This is a research project. Your participation is voluntary. Ice hockey goalies, and goalie coaches will provide their opinions, thoughts, and feelings about the mental challenges faced by goalies, and the use of mental skills training for goalies to address these challenges. Data will be collected in an online focus group or individual interview. The data collected will be used in research for the Principal Investigator's dissertation on Mental Skills Training for Ice Hockey Goalies.

### **Why are you asking me?**

You are being asked to participate based upon your experience as an ice hockey goalie or goalie coach. Participants must be 18 or older.

### **What will you ask me to do if I agree to be in the study?**

You will be asked to participate in an online focus group or interview, via Zoom, about the mental challenges faced by goalies, and mental skills training for goalies.

### **Is there any audio/video recording?**

Yes, the online focus group interviews will be audio and video recorded via Zoom. The audio recordings will be transcribed via Temi.com. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say on the recording cannot be guaranteed although the researcher will try to limit access to the recording.

### **What are the risks to me?**

The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. If you have questions, want more information or have suggestions, please contact Theodore Monnich, Principal Investigator, who may be reached at (803) 466-8223, email: tfmonnic@uncg.edu, and Dr. Diane Gill, Faculty Advisor, dgill@uncg.edu.

If you have any concerns about your rights, how you are being treated, concerns or complaints about this project or benefits or risks associated with being in this study please contact the Office of Research Integrity at UNCG toll-free at (855)-251-2351.

### **Are there any benefits to society as a result of me taking part in this research?**

Benefits to society include enhanced knowledge of the needs and efficacy of mental skills training to ice hockey goalies.

### **Are there any benefits to me for taking part in this research study?**

There are no direct benefits to participants in this study.

### **Will I get paid for being in the study? Will it cost me anything?**

There are no costs to you, or payments made for participating in this study.

### **How will you keep my information confidential?**

Information will be kept confidential by being stored in a locked file cabinet, password protection, encryption, not identifying participants by name when data are disseminated, and anonymous and confidential data collection procedures, and will be kept secure for use in future research. All information obtained in this study is strictly confidential unless disclosure is required by law.

### **Will my de-identified data be used in future studies?**

Your de-identified data will be kept indefinitely and may be used for future research without your additional consent.

**What if I want to leave the study?**

You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state. The investigators also have the right to stop your participation at any time. This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped.

**What about new information/changes in the study?**

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

**Voluntary Consent by Participant:**

By participating in this interview, you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly willing consenting to take part in this study. All of your questions concerning this study have been answered. By participating in this interview, you are agreeing that you are 18 years of age or older and are agreeing to participate, in this study described to you by Theodore Monnich.

**CONSENT DOCUMENT**

**You are being asked to voluntarily participate in a focus group interview.**

**Your presence indicates your willingness to participate, and that you grant your consent to the Principal Investigator, Theodore Monnich to record and collect your discussion for research. If you do not agree to participate you must leave the online discussion at this time.**

**I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any adverse consequences. If you do not agree to participate you must leave the online discussion at this time. Does anyone have any questions?**

## APPENDIX G: INTERVIEW SCRIPT

### **My Introduction**

- My name is Theodore Monnich. I am a doctoral candidate at the University of North Carolina at Greensboro. I am a former goalie and goalie coach, and I am a sport psychology consultant researching mental skills training for ice hockey goalies.
- The purpose of this interview is to follow up the survey and gather more insight into the mental challenges that goalies face and the mental skills most needed by goalies. The findings of this research may be used to develop resources for goalies so that they can self-assess the mental challenges facing them and apply specific mental skills training to address and manage those challenges.
- Read the attached Consent documents, and display on a shared screen in Zoom, to the participants and ask if anyone has any questions?

Just a few ground rules to help the process go smoothly.

- Participation in the interview is voluntary.
  - It's all right to abstain from discussing specific topics if you are not comfortable.
  - All responses are valid—there are no right or wrong answers.
  - Please respect the opinions of others even if you don't agree.
  - Try to stay on topic so that we can cover all the material.
  - Speak as openly as you feel comfortable.
  - Everything said in the interview is confidential. Do not discuss details outside the interview.
  - The session will be recorded and transcribed. Names will be removed to preserve confidentiality. You will be sent a transcript for review later.
- Any questions before we begin?

### **Participant Introductions**

Please use your 1st name only or you may use a pseudonym. In order to protect everyone's privacy do not use any names during the interview.

Please take a moment to introduce yourselves and, tell us a little bit about your experience as a goalie or goalie coach.

#### **Topic 1: Perceptions of mental challenges facing goalies**

The position of goalie in the sport of ice hockey is a unique solo position on a team that comes with its own unique set of mental challenges. The goalie's job is to prevent goals from being scored on their team, but goals will be scored. When goalies inevitably are scored on, they must manage the ensuing mental challenges such as emotional control and loss of self-confidence.

Question 1: What mental challenges do goalies most frequently experience?

Follow up question: What mental challenges do you, as a goalie, experience?

Follow up question: Which ones have most impact/effect on goalies; and how do any of these affect performance/game?

Question 2: How has a mental challenge affected your game, your performance?

Question 3: Anything else about mental challenges before we move on to mental skills, and dealing with challenges?

Transition Question: How do you or other goalies deal with these mental challenges that we have discussed?

**Topic 2: Perceptions of Mental Skills**

Mental skills enable an ice hockey goalie to deal with challenges. A mental skill is a learned skill that can be practiced and developed. The most common mental skills Mental Skills Training programs involve attention control, thought control, and emotional control skills.

Question 1: What are important mental skills for a goalie?

Follow up: What are the top 3 most important mental skills? Why?

Question 2: Do you have any experience with mental skills training?

Question 3: How common is MST goalies?

Follow up: Why or why not?

Question 5: What kinds of mental skills training would you or most goalies want?

Follow up: What skills, how delivered, what would make MST more attractive to you or other goalies.

Final Question: Is there anything you'd like to add about mental challenges or MST in hockey or specifically for goalies?

APPENDIX H: THEMATIC CODE GROUPING

<b><u>Staying in present moment</u></b>	<b><u>Competitive Attitude</u></b>	<b><u>Confidence</u></b>
Thinking Controlling thoughts Short memory Distraction Preparation Focus Reset	Challenges Competitive Consistent Adversity Pressure Resilience Feeling alone Isolation	Belief Caring Trust Enjoyment Connection Culture Self-Confidence Self-Efficacy Self-esteem Responsibility Motivation Identity
<b><u>Self-Improvement</u></b>	<b><u>Anxiety/Doubt</u></b>	<b><u>Self-Assessment</u></b>
Self-Assess Self-Critiquing Self-Relection Self-talk In-person Online Habits Journaling Goalsetting Routine	Doubt Stress Worry Nervousness Anxiety Fear Fault Mistake Failure Disgust Imposter Results Parents	Mindfulness Meditation Breathing Centering Anchors Relaxation Comfortable

## APPENDIX I: SAMPLE PARTICIPANT RESPONSES

### Survey, Interview & Focus Group Open-Ended Questions

Theme	Source	Sample Responses
Staying in the Present Moment	Interview & Focus Group	<p><i>If your brain's running around when you're playing a game, you're not going to be able to read the play.</i></p> <p><i>I would say - thinking about some of the stuff that didn't necessarily have to do with the moment.</i></p> <p><i>I probably wasn't as prepared on breakouts as I normally would be. You know, I'd be more thinking about it and I wouldn't really notice that they'd be coming in.</i></p> <p><i>It's also not only about forgetting about the goals. And in that, but also about your day job and your family and all that stopping out from coming in and you know whether you can use that or whether it's detrimental or whatever.</i></p> <p><i>They just can't focus on the next step, or what's coming, and they continue to focus on the past and their past mistakes which then leads them to focus on that and then making that same mistake again.</i></p> <p><i>So that's like here's what I could do better next time. Now I'm going to reset.</i></p> <p><i>Just being able to let go of past mistakes</i></p> <p><i>It's hard not to think about why I want to win this game and you know your mind wandering to a place that's not really relevant because if we're worrying about that. I think we will start losing focus on what is happening in the now.</i></p> <p><i>Trying to just stay in the moment.</i></p> <p><i>I just let one end, so I'm not perfect. So, you know, the question they're questioning, they're not in the moment they're still stuck with that last goal. I the best games I've had were the ones where the buzzer sounded and I didn't even realize the play ended, and I was just so in the moment and not worrying</i></p> <p><i>That's I think that's what everybody wants and mental skills. I think staying in a moment during a game is the number one.</i></p>
	Survey	<p><i>controlling thoughts</i></p> <p><i>Maintaining focus or concentration</i></p> <p><i>Day to Day, minute to minute, second to second high level focus and how/when to shut it off</i></p> <p><i>Maintaining focus, all others affect this</i></p> <p><i>Managing their thoughts and emotions.</i></p> <p><i>Focus.</i></p> <p><i>Maintaining the same focus level no matter what the situation is staying present and focusing on your position</i></p>



		<p><i>Maintaining focus and concentration.</i></p> <p><i>Emotional and thought management</i></p> <p><i>maintaining concentration while the play is not engaging</i></p> <p><i>Controlling emotions, thoughts</i></p> <p><i>Focus</i></p> <p><i>Letting go of / not dwelling on mistakes.</i></p> <p><i>fighting through physical discomfort to stay focused</i></p> <p><i>Being able to control what goes on between your ears on the ice, not just with what is going on the ice but at home, school and other activities.</i></p>
Anxiety/Doubt	Interview & Focus Group	<p><i>It's a tough loss when it comes when you know it's your fault. Anger at myself, disgusted with myself.</i></p> <p><i>I think one of the things that I see a lot of young goalie struggling with is like letting down their team like they've worked in the school and now it's all their fault.</i></p> <p><i>I think I just put a lot of pressure on myself to be perfect because I'm like, oh yeah, this is great. We've been doing so well up to here like now it's all on me, which it never is. And it never has been to, like, win the game. And so then I'm like, super focused on that and not on my actual job as a goalie.</i></p> <p><i>You know some of the parents you see, especially in youth hockey. The boys get scored on and you know they're there. Look, sometimes they don't. They don't even look at the bench there the first look is they look at their parents up in the stands.</i></p> <p><i>You know, then all sudden I get scored on. My mechanics are good and it was just a good shot. You know, like, what am I just doing wrong. What is going on here?</i></p> <p><i>Another hurdle for goaltenders is sometimes they can't get over thinking about what the coach thinks.</i></p> <p><i>Yeah, how do you face adversity. If you think you're going to go to work each day and everything is going to be sunshine and roses. Yeah, you're wrong, somebody coming for your job, somebody wants to You know, there's always you gotta learn how you do deal with it.</i></p> <p><i>When I stopped caring so much I became a better goalie.</i></p> <p><i>If you don't have the support of your teammates, you know, like for a goalie can be absolutely miserable.</i></p> <p><i>Maybe saving the game salvage Ty salvage a win something like that and we focus on the bad game, on that one shot that made a difference, but we forget maybe the 32 other saves are made before then, then go in</i></p>
	Survey	<p><i>Negative thoughts / self-doubt</i></p> <p><i>Dealing with negative thoughts</i></p> <p><i>Dealing with failure</i></p>

		<p><i>Self-doubt</i></p> <p><i>Developing systems to combat fear, doubt, &amp; anxiety</i></p> <p><i>Fear: of being humiliated; of being injured.</i></p> <p><i>Problems outside of hockey</i></p> <p><i>thinking about off-ice matters</i></p> <p><i>Home life</i></p> <p><i>External pressures from team, family etc.</i></p> <p><i>Not letting things outside of hockey affect your play.</i></p> <p><i>Outside interference</i></p> <p><i>Worries from outside of hockey; Family issues etc.</i></p> <p><i>Parental pressure. Social media. "Win-now" culture.</i></p> <p><i>Not letting things in their personal life affect them on the ice.</i></p> <p><i>For youth and high school goalies, input (verbal and/or body language) from the players' parents' post-game (what I call "car coaching").</i></p> <p><i>What does the coach think of me, the crowd, my teammates, my goalie partner? Although this is related to the listed mental challenges it might be significant enough to also consider on its own. I'd also expand on 'recovering after getting scored on' to also consider after a bad loss, after being pulled, cut, etc.</i></p> <p><i>Letting the team down, progressing to the next level etc. fear of injury, fear of certain slap shots, fear of poor fitness</i></p>
Self-Awareness	Interview & Focus Group	<p><i>Sometimes just taking time to relax, sit back and just breathe and not think about anything.</i></p> <p><i>Also, I think finding like something to take to take your mind away from negative thoughts, feelings like the breathing</i></p> <p><i>I think then using like breathing definitely or something where you go through, like I said before, where like replay in your head or physically what went wrong. Help you get over it.</i></p> <p><i>Breathing techniques are, I don't know enough about them, but I know they help quiet your mind. Does that make sense to you? You know, rather than letting your mind wander.</i></p>
	Survey	<p><i>breath regulation</i></p> <p><i>controlling emotions</i></p> <p><i>Breathing as a way to stay in the moment</i></p> <p><i>Controlling Emotions</i></p>

		<p><i>using imagery.</i></p> <p><i>Learning how to mentally prepare yourself for a game to find your “zone” consistently</i></p> <p><i>To be able to control one’s emotions</i></p>
Self-Improvement	Interview & Focus Group	<p><i>I think it's just the last thing that people have thought about and it may have to do with lack of research, lack of nobody gets trained in it.</i></p> <p><i>There aren't many people that I'm aware of that have the background and skills</i></p> <p><i>I think there's a void there. As I said, not enough research, not enough people trained maybe aren't interested in it yet. Or people can't see a way to make money off of it. Let's just be honest. Yeah. That that drives a lot of it.</i></p> <p><i>The parents have to buy into it as well. And that's, that's the other roadblock that I've encountered.</i></p> <p><i>I live in an extremely small town in the middle of nowhere. So there's absolutely none, it's nonexistent.</i></p> <p><i>I think just in general hockey's really behind like if you will get soccer and how they do their practices in terms of like smaller games and everyone's moving like they're years ahead of hockey and I don't think we've caught up to it.</i></p> <p><i>I think hockey is an expensive sport already a nice time is limited in most places. So that becomes a priority. And then just mental skills just haven't caught up like importance yet.</i></p> <p><i>I'm not sure. I mean, I think the struggles are in just like mental health is like a stigma. You don't want to be having problems with that. Right. When in reality everyone should be seeking some sort of like advice on that.</i></p> <p><i>Yeah, I'm I mean, maybe you change the language, a bit or somehow make it more tangible. I think with the young kids. It's very abstract and even was like adults. You're thinking about you're thinking like, there's nothing to see there, so I know using some real-life physical examples are using a color chart</i></p> <p><i>Coach02: I don't think most coaches would even know where to begin. And the ones that do talk about it. I don't think they really know what they're talking about.</i></p> <p><i>I don't think it's ever going to be attractive to goalies. I'm on a lot of different kind of Facebook groups and I see people that put out like no mental edge training, stuff like that. I've seen a couple of them. Then it starts with the parents and the parents think it's a crock of, you know, what they think it's baloney. Okay, and they think it's just people trying to take their money. So, I think you have to convince the parents first. Convincing the parents that it's a real thing. Yes. Then once you convince the parents, then you have to get your goalie coaches on board and like, just because they're a goalie coach doesn't mean they know what they're talking about, I guess.</i></p> <p><i>So yeah, I mean, I mean, I've seen I've heard. I've heard some boy coaches go say like, well, they just need to be tougher you seen a tough. Now you need to push through and let alone that that means nothing to them like.</i></p> <p><i>I do think it's becoming more mainstream. I do think years ago I think goalies were embarrassed to say, hey, I need to go see someone about this.</i></p>

		<p><i>No doubt about it. You know, it's a stigma that probably goes back to like the mental health factor of it, but I know back in the 80s. There was no let me go talk to the doctor.</i></p> <p><i>But I think that mentally maybe the players years ago or a little mentally stronger because they're I they may be a little because now it's like the new wave athlete seems like they need a coach for everything. I'm not saying that's wrong.</i></p> <p><i>But when I start talking about mental training or even I've talked about I training with a lot of these people. And it's kind of like you can see them glaze over. And that's the end of it. Yeah. Yeah. So how do you sell it, you have to have results somewhere.</i></p>
	Survey	<p><i>using positive self-talk to control any negative thoughts that may creep in</i></p> <p><i>Using positive self-talk to stay present and in control, especially when under pressure</i></p> <p><i>Positive self-talk</i></p> <p><i>self – talk</i></p> <p><i>Using positive self-talk to stay present and in control, especially when under pressure</i></p> <p><i>Visualization, self-talk and controlling emotions and negative thoughts and feedback.</i></p> <p><i>Actualizing potential</i></p>
Confidence	Interview & Focus Group	<p><i>That self-belief was more powerful and with self-doubt and yeah I could quiet the self-doubt quiet the lack of confidence</i></p> <p><i>I don't know the numbers and the stats behind all of it, but (MST contributed to) noticeable differences in my mental state, my enjoyment, and performance more than anything.</i></p> <p><i>It's not so much mental skills training. It's enjoy the game more which is two different things that I need to do mental skills training.</i></p> <p><i>If the package of the box around it was, do you want to enjoy the game or better. So, I do, how can I do that? The game as a gift and I think the older I get, the more that's kind of like a mind. But I think the box of mental skill training is 'enjoy the game more' you want to jump.</i></p> <p><i>Maybe getting criticized from coaches, teammates, stuff like that, because I can be really difficult to kind of let go and make you confident within yourself and confident that you know what you're doing.</i></p>

		<p><i>If you don't have the confidence in yourself. And if you're talking down to yourself. Nobody is going no one else is going to do that. No one else is going to talk positively for you like no one else is going to want to give you that confidence if you don't even have a shred of confidence within yourself.</i></p> <p><i>Some of the hardships I've faced throughout hockey and helped me kind of make sense of some of those and try to help build my confidence back.</i></p> <p><i>That, whether it's a self-confidence issue or you know imposter, whatever it might be, but those thoughts just kind of playing on a constant loop distracting me from what I need to actually be focused on which is stopping the puck.</i></p> <p><i>I think confidence is probably the biggest struggle that most goalies have.</i></p>
	Survey	<p><i>Self Confidence</i></p> <p><i>Self-esteem, am I a good enough goalie for this team? Did I cost my team the game? Playing through injury.</i></p> <p><i>Confidence, Self-evaluation, Communication</i></p> <p><i>Finding success</i></p> <p><i>Disappointment in not attaining goals or expectation (e.g., being cut from a team)</i></p> <p><i>Dealing with success</i></p>
Competitive Attitude	Interview & Focus Group	<p><i>Challenge when you have to deal with some of those physical things as well.</i></p> <p><i>Would you rather play poorly and have the team win or play great and lose 1-0?</i></p> <p><i>The most crucial thing a goalie needs is just overall competitiveness, and I've wondered about it. How do develop that as a mental skill, whether they've got to find a way to get themselves more motivated to get themselves in that competitiveness.</i></p> <p><i>Um, I would say definitely keeping my confidence and that consistency like obviously like I said before, the confidence and consistency kind of go hand in hand</i></p> <p><i>I guess there's been kind of some inconsistency when I've had been going through mental difficulties and it's not as much now, but in the past or in recent years with some of the mental challenges I've faced I've shown a lot of inconsistency in practice like I'll be kind of in my zone one game or one practice. And then the next. It's like it's a different goalie.</i></p> <p><i>Been a lot of inconsistency where I'm just trying to ride on that wave of flow going. And I just want to keep that going. But that's been pretty difficult with some of the mental challenges.</i></p> <p><i>My emotions and maintain a more consistent emotion.</i></p>

		<p><i>Really turned a corner and I was much more consistent and performing at a higher level on a much more consistent basis and. And not only that, feeling less stressed feeling more relaxed and really enjoying the game more.</i></p> <p><i>The chances of them being consistently at a certain level is more of a role of a roll of the dice and you know if they're good athletes they will find a team, and if not, they will get weeded out.</i></p> <p><i>Just kind of that general pressure of being in a game scenario and performing.</i></p> <p><i>Carrying that pressure and finding a way to kind of manage and deal with whether it's whether that manifests in, you know, self-doubt or whatever it might be.</i></p> <p><i>That mental pressure of kind of being like the center of attention and again, do I belong.</i></p> <p><i>About being an individual, being on the island</i></p> <p><i>I think in some ways that the goalie feels alienated</i></p> <p><i>For me, that always carried a lot of pressure just that you are on an island within a team.</i></p> <p><i>I think a lot of times, always feel alienated because they're not they're not part of the team know coaches are designing drills.</i></p>
	Survey	<p><i>Preparing with the same intensity game after game to be able to perform optimally.</i></p> <p><i>Performing consistently</i></p> <p><i>Performing consistently</i></p> <p><i>Consistent performance</i></p> <p><i>Being able to consistently perform and get into the flow state on a nightly basis</i></p> <p><i>Performing consistently</i></p> <p><i>Game ready mentally</i></p> <p><i>challenges when playing on a bad team day in and day out, the wear it takes on the mind</i></p> <p><i>Social pressure, not feeling great physically.</i></p> <p><i>Social pressure, not feeling great physically.</i></p> <p><i>Digesting the people and factors off the playing surface that you feel you are impacting.</i></p> <p><i>Preparation</i></p> <p><i>Performing to the standards of a coach, scout etc.</i></p> <p><i>Exterior pressures like coaches</i></p> <p><i>Team performance, Coaching decisions, poor relationship with goalie partner.</i></p> <p><i>Team counting on you to cover their mistakes.</i></p>

		<p><i>Preparation and focus assuming that parents and teammates aren't an issue.</i></p> <p><i>Handling pressure from outside and not building that into your confidence.</i></p> <p><i>And building a strong self-awareness and self-image</i></p>
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## APPENDIX J: RESEARCHER POSITIONALITY STATEMENT

My experience with the mental challenges faced by goalies is rooted in my lifelong experience as an ice hockey goalie at every level and over 20-years of experience as a goalie coach. This informs my practice-based evidence and understanding, and biases associated with the mental challenges faced by goalies. I have experienced mental challenges, as have my goalie teammates, and my goalie students.

I am also a mental skills coach and sport psychology consultant working with goalies on teams and privately. In this capacity I help my goalie clients to gain awareness and perspective of the mental challenges they face. I also teach them mental skills to manage these challenges. As a goalie, coach and sport psychology consultant a goalie's mental challenges and the skills to manage them has become second nature to me. And that brings biases.

I am biased to the fact that ice hockey is the last major sport in North America to accept and utilize mental skills training. This is rooted in a fraternity of old school coaches who have no experience in sport science and believe that all you need to do is "skate it off," or "rub some liniment on it." They confuse sport psychology with clinical psychology, and mental challenges with mental illness and promulgate a lingering stigma about anything mental or psychological. However, they too experience mental challenges as a coach. One night at dinner an AHL hockey team head coach asked me "Who do the coaches get to talk to?" "Here I am" I said.

I must be conscious of and avoiding my biases in this study. In fact, in mental skills training, self-awareness is the first step. This study is establishing for the first-time what goalies identify as their greatest mental challenges and speaking out about their feelings about mental skills training. Their statements are informing science about the most effective ways to help them manage these challenges. It is not about my experience as a sport psychology consultant, or even as a goalie. My role is to guide and facilitate the study as an example of evidence-based practice. In this way I call on the relevant current scholarly literature (Literature Review), the needs of the goalie community acted on as the study's research and data analysis (Patient's Preferences), and then in summarizing, disseminating, and acting on the results of the research based on my own Professional Experience. Approaching this study as an Evidence-Based Project helps to restrict my bias and maintain integrity.





## Mental Skills Training for Ice Hockey Goalies A Dissertation 2021

Theodore F. Monnich, Ed. D.

Global Goaltending Retreat  
Breckenridge, Colorado

### Established needs

- *“At our National Team Goalie Camp, we asked all of the athletes, what they felt were their biggest deficiencies and they said **consistency**, **confidence**, and **metal skills**.”*
- *“We are going to make it a goal at USA Hockey to be the first nation to make mental skills training mandatory and not just a good idea.”*

Steve Thompson, Director of Goaltending for Team USA, 2020



## INTRODUCTION

- In order to design effective mental skills training programs for goalies we need to know the mental challenges facing goalies.



## MENTAL SKILLS

- Mental skills allow athletes to enhance productive mind/body states, and control unproductive mental states, enabling them to perform at their best.
- The main mental skills common to all mental skills training programs
  - Cognitive control: controlling thoughts and attention
  - Emotional control: controlling emotions and levels of arousal.



## MENTAL SKILLS TRAINING (MST)

- Key components to an MST program
  - Assessment of the goalie's needs (profiling, monitoring),
  - Education of the goalie (gain buy-in, set expectations),
  - Mental skill acquisition (practice/development),
  - Transferring/using the mental skill in a sport setting
  - Evaluation of the goalie's successful understanding and application of the skill



## MST FOR GOALIES

An earlier study suggests that the ice hockey goalie position is one of the most demanding in team sports, and that optimal performance in the position is 90% mental. They suggest that key mental skills necessary for the position include, among others, concentration, arousal control, imagery, and self-talk (Gelinis & Munroe-Chandler, 2006).

The current study shows that most mental challenges facing goalies are rooted in thoughts. The mental skills used to address these challenges are cognitive control including thought control and attentional control.

Cognitive techniques include meditation, structured breathing, self-talk, grid exercise, and practice shifting attention.

Emotional control techniques include meditation, structured breathing, and progressive muscle relaxation which also involve attention/thought control.



## OBSTACLES TO MST IN ICE HOCKEY

Many athletes do not use MST because they are not aware of the opportunities and benefits. One reason for this is that the sport psychology profession fails to adequately address specific sports and positions.

Likewise, hockey tends to be resistant to change from the establishment due to its insular culture.

Sport psychology and MST are often conflated and confused with clinical psychology and mental illness due to this lack of understanding.

Weinberg & Gould (2019) note an overall increase in athletes' willingness to participate in mental training when they realize the performance benefits.



## OBSTACLES TO MST IN ICE HOCKEY

The key to resolving these issues is educating athletes and coaches about the prevalence of mental challenges in ice hockey, their distinction from mental illness, and their deleterious effects on performance.

This, along with education on the effectiveness of mental skills training for managing mental challenges and enhancing performance, can aid in opening ice hockey to more mental skills training.



## PURPOSE STATEMENT

The purpose of this study is to identify the mental challenges that ice hockey goalies face and the mental skills most needed by goalies. The findings of this research will be used to develop resources for goalies so that they can self-assess the mental challenges facing them and apply specific mental skills training to address and manage those challenges. The specific aims of this study are:

*Aim #1: Identify the mental challenges faced by ice hockey goalies.*

*Aim #2: Identify the important mental skills for goalies*



## METHODS

The study featured an online survey, 4 -online focus groups & 9 -individual interviews.

## PARTICIPANTS

There were a total of 115 participants (99 males and 16 females), 35 goalies and 80 goalie coaches. *Only 2 of the coaches were never goalies.*

Almost half of the goalies were playing at collegiate or professional levels and half played at the Junior level. The participants were from 12 countries.

Interview subset: n=9, 3-females, 6-males (3-goalsies, 6-coaches).

Focus group subset: n=12, all male (5-goalsies, 7-coaches).



## MEASURES

The survey featured questions about

*Mental challenges (Maintaining Concentration, Controlling Emotions, Recovering After Getting Scored On, Performing Consistently, Controlling Thoughts, Anxiety Nervousness & Fear, and Dealing with Negative Thoughts)... and*

*Mental skills (Staying Focused, Controlling Thoughts, Arousal Regulation, Controlling Emotions, Using Self-Talk, Setting Goals, Using Imagery, Recovering from Failure)*

on a 5-point scale.



## MEASURES

The survey included the ASCI -28 as a measure of the athlete's mental skills.

Focus groups and interviews using similar scripts were conducted with goalies, and goalie coaches asking the participants about mental challenges, important mental skills, and experience with mental skills training.



## The Athletic Coping Skills Inventory -28 (ACSI-28)

ACSI-28 is an assessment for measuring an athlete's psychological skills. Only the goalie participants took the ACSI -28. The participants' scores were **very high**, many at the highest levels possible, and none at the lowest. The **highest mean scores** were **Coachability** and **Confidence & Achievement Motivation**. The **lowest mean scores** were for **Goal Setting & Mental Preparation** and **Freedom from Worry**.

Table 3. ACSI-28 Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Coping with Adversity	7	15	11.41	1.88
Coachability	8	16	<b>13.71</b>	2.05
Concentration	9	16	12.26	1.83
Confidence and Achievement Motivation	11	16	<b>13.41</b>	1.46
Goal Setting and Mental Preparation	5	16	11.26	3.19
Peaking Under Pressure	7	16	12.85	2.42
Freedom from Worry	6	15	10.62	2.31

n=34, The possible range is 416 (4 items each with 1-4 scoring)



## RESULTS

Participants rated all the mental challenges at the **highest 2 levels**, with very small differences. Only a few of the participants rated any challenges as low.

Table 1. Survey Ratings of Mental Challenges

Frequency		Not at all		A little		Moderately		A lot		Almost Always		M	
Goalie	Coach	G	C	G	C	G	C	G	C	G	C	G	C
Maintaining focus or concentration		1	-	4	6	9	18	10	29	10	26	3.71	3.95
Controlling emotions		1	1	3	5	8	17	18	36	4	20	3.62	3.87
Recovering after getting scored on		-	-	2	1	8	19	20	39	4	20	<b>3.76</b>	<b>3.99</b>
Performing consistently		-	-	1	-	5	13	20	28	8	38	<b>4.03</b>	<b>4.32</b>
Controlling thoughts		1	-	2	2	6	15	15	30	10	32	<b>3.91</b>	<b>4.16</b>
Anxiety, nervousness, or fear		1	-	3	4	10	29	17	23	3	23	3.53	3.82
Dealing with negative thoughts		1	-	-	3	8	19	20	34	5	23	<b>3.82</b>	<b>3.97</b>

Goalies n=34, Coaches n=79, 1-5 scoring



## RESULTS

All the mental skills were rated at the highest 2 levels, with very small differences. Only a few of the participants rated any skills as low.

Table 2. Survey Ratings of Mental Skills

Frequency		Strongly disagree		Somewhat disagree		Neither agree nor disagree		Somewhat agree		Strongly agree		M	
Goalie	Coach	G	C	G	C	G	C	G	C	G	C	G	C
Staying focused		-	-	-	-	-	-	4	11	30	66	<b>4.88</b>	<b>4.86</b>
Controlling thoughts		-	-	-	-	1	1	7	16	26	60	<b>4.74</b>	<b>4.77</b>
Arousal regulation		-	-	2	-	18	1	12	33	11	26	3.97	4.10
Controlling emotions		-	-	-	-	1	3	12	23	21	51	<b>4.59</b>	<b>4.62</b>
Using self-talk		-	-	1	-	5	11	17	21	11	45	4.12	4.44
Setting goals		-	-	-	1	3	9	15	27	16	40	4.38	4.38
Using imagery		-	-	-	1	5	6	16	31	13	39	4.24	4.40
Recovering from failure		-	-	-	-	1	3	4	9	29	65	<b>4.82</b>	<b>4.81</b>

Goalies n=34, Coaches n=79, 1-5 scoring



## RESULTS

The most often cited mental challenges in **interviews**, **focus groups**, and **open-ended questions** are **Anxiety/Doubt** and **Staying in the Present Moment**.

Table 5. Interview & Focus Group Mental Challenges

Staying in the Present Moment	Competitive Attitude	Anxiety/Doubt	Confidence	Self-Awareness	Self-Improvement
<b>529</b>	414	<b>549</b>	223	86	181

Frequency

*Goalie06: "The fear of failure. The fear of letting your team down, letting your coach down. My biggest fear is that I will underperform."*

*Coach04: In the same dressing room, there's a lot of pride going on there. So (a loss) is tough. It's a tough loss when it comes, and when you know it's your fault.*

*Goalie05: "When you constantly have those thoughts flowing through your mind of what happens if I let in this goal, and, you know, oh my God, there's six minutes left in the game. Can we make it six minutes without getting scoredn?"*





## RESULTS

The most often cited mental skills in **interviews, focus groups** and **open-ended questions** are:

Mental Skills	Breathing	Self-Assessment	Self-Talk	Anxiety/Doubt	Staying in the Present Moment	Self-Improvement
Interview/Focus	-	-	-	18	<b>23</b>	7
Open-ended Qs	23	<b>41</b>	17	-	-	-

### Self-Assessment

*Coach08: "When you assess and go back and think about being able to do a good mental skill is the ability to assess your performance and so to say, did I do a good job? Yeah, I did a good job. I did everything that I was supposed to do."*

### Staying in the Present Moment

*Coach04: "One of the reasons why I love goaltending is that it is very focused."*



## CONCLUSION

In the surveys participants rated ALL mental challenges and mental skills highly. Almost everyone chose *agree/strongly agree* or *a lot/always*. Almost no one responded at the lower end. This indicates a strong awareness of the mental challenges facing goalies, and a desire for the mental skills that can assist in managing these challenges.

The mental challenges of *controlling thoughts*, and *anxiety/doubt* are rooted within the area of Cognitive Control. By controlling their runaway thinking, goalies also manage their anxiety and doubt.

The mental skills of *staying focused* (Attentional Focus), *staying in the present moment* (Mindfulness), and *self-assessment* (Mindfulness) are, likewise, part of Cognitive Control, and address these challenges.

The interview findings confirm that goalies experience most mental challenges, and the most cited challenges require cognitive control skills to manage. However, far fewer interview participants discussed mental skills. Apparently, goalies know the challenges they face but are less aware of the mental skills to manage them. These findings enable the development of MST programs targeted to the specific needs of ice hockey goalies.



## Future Directions

- Action Plan:
  - Creation of an MST program for goalies based on this study .
  - The program can then be modified and published as a book , manual, or smartphone app .
  - Continue to present MST for goalie strategies and programs at workshops , camps, and online, including GGR, USA Hockey, GDI USA, IIHF, InGoal magazine, and NHL.com.
  - The goal is to provide goalies with an accessible usable tool with which they can self -assess the mental challenges that they are facing and determine the best mental skills to apply for managing the mental challenges, enabling goalies to develop mental strengths for identifying and managing the mental challenges that they encounter in their position.

