Referees are a vital element of almost all organized sport competitions; however, sport managers and administrators are facing a growing problem as the number of qualified referees continues to decline (Kellett & Shilbury, 2007). Not having enough qualified referees can lead to a number of issues that negatively impact sport administrators, players, coaches, parents, and fans. Therefore, a better understanding of the factors that attract individuals to officiating, as well as factors that drive referees away from the role may help sport organizers to develop strategies for recruiting and retaining referees.

Much of the literature on referees has focused on psychological issues related to referee recruitment and retention. Some early studies looked at patterns of initial entry into officiating and reasons for continuing (Furst, 1989, 1991; Purdy & Snyder, 1985). Other studies focused on understanding stress, burnout, and coping responses (Goldsmith & Williams, 1992; Kellett & Shilbury, 2007; Rainey, 1995, 1999; Rainey & Hardy, 1999; Taylor, Daniel, Leith, & Burke, 1990; Wolfson & Neave, 2007). More recent research has examined sociological and organizational factors associated with the recruitment, retention, and attrition of referees (Forbes & Livingston, 2013; Kellett & Warner, 2011; Tingle, Warner, & Sartore-Baldwin, 2014; Warner, Tingle, & Kellett, 2013).

In their study on the experiences of former basketball referees, Warner et al. (2013) found that off-court organizational and administrative factors were more influential in decisions to leave officiating than on-court problems. This work resulted in a Referee Attrition Model comprised of 10 factors that emerged within the sport development stages of referee recruitment, referee retention, and referee advancement. Warner and colleagues’ study, along with much of the other recent research on sports referees, was qualitative in nature and based on a small purposive sample. The purpose of the current study is to develop a psychometrically sound scale to measure the 10 factors found in the Referee Attrition Model and examine its relationship to referees’ intention to leave officiating.

The survey instrument included four to five items for each of the 10 factors identified in Warner et al.’s (2013) Referee Attrition Model, a measure of intention to leave officiating (Abrams, Ando, & Hinkle, 1998), demographic items, and six open ended questions related to recruitment, retention, and attrition of referees. The survey was reviewed by a panel of eight experts with offi ciating experience for face and content validity. Qualtrics software was used to create an online survey. The survey was distributed to several groups of officials from multiple sports who work at various levels including youth sports, high school sports, intercollegiate athletics, and Junior Olympic competitions. An email with the survey link was sent by a representative of each group to a listserv of referees.

Thus far, 138 surveys have been collected and 117 were considered competed and utilized for preliminary analysis (data collection is still in progress). All statistical analyses will be conducted using SAS 9.4 and Winsteps 3.65 program for Rasch analysis, a relatively new measurement tool based on probability theory, that provides overall item validity and reliability in order to assess and improve the scale.

The Rasch-Andrich rating scale model was used to analyze the preliminary data (Wright & Masters, 1982). The item measure (difficulty level of referee attrition items; lower logit score indicates more likely to endorsed items) and person measure (individual level of referee attrition; higher logit score indicates higher degree of referee attrition) were estimated by the joint maximum likelihood method.

The unidimensionality, which illustrates how the scale items are measuring a unidimensional construct (i.e., referee attrition), was determined by model fits (Infit and Outfit statistics; acceptable range from 0.5 (little variation) to 1.5 (large variation) indicating good fit (Linacre, 2002)). The item separation, which indicates how well the items are
spread along the person measure, and separation-reliability (close to 1.0 indicate higher confidence level, Bond & Fox, 2007) indices were also determined for the preliminary data.

The preliminary results indicate the model fit the data well. Except for 4 items, all the Infit and Outfit statistics were in the acceptable range. This finding indicates that the 38 Referee Attrition items fit the unidimensional construct that this scale was intended to measure and 4 items need to be considered from the final estimations. The item separation was 6.37 and item separation-reliability was .98. This shows that items were well distributed along the scale with a high confidence level. The initial Wright maps, which visually demonstrate the relative location of items along the scale, were completed and indicate a few problem items that will likely be removed or modified for improvement and a few redundant items that can be deleted to improve the scale function. Overall, these maps indicated that the items were well spread and that some items can be removed or improved upon. However, more data is being collected to better calibrate those items. The preliminary results also demonstrated that the correlation between ‘referee retention’ and ‘intention to leave the officiating’ was statistically significant (r = -.499, p < .001), indicating there is a moderate negative relationship between two variables.

In summation, the preliminary results indicate a scale based off Warner et al.’s (2013) Referee Attrition Model will serve as an important tool for sport managers to learn more about the factors influencing referee retention and/or attrition. Such information is valuable to managers and administrators as they try to develop strategies for recruiting and retaining more referees.