THE PSYCHOLOGY OF URINE DOPING TESTS

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Introduction

Doping and doping tests are omnipresent topics in competitive sports. Athletes participating in competitions can potentially face a urine doping test after each competition and usually also during training sessions. The media mainly reports about positive test results; however, there is another less prominent issue related to urine doping testing. The athletes want to urinate, but it takes hours before they actually can. In most of these cases this condition is not a known medical issue, but a psychological problem, making it difficult for athletes to urinate in the presence of others. These problems that can lead to major interruptions during training also hinder recovery after competitions (Kellmann, 2002). Furthermore, athletes report being dissatisfied with the situation; and especially younger athletes, who are not used to the process of urine testing, are afraid of the tests.

Previous work done by the research group around Hammelstein focused on the clinical disorder called "paruresis," which is the anxiety of being unable to urinate in the potential presence of others. People suffering from paruresis are unable to urinate in public areas and therefore avoid doing so in situations where others might see or even hear them. They are usually strongly impaired in their daily lives. However, this clinical disorder cannot be compared to a sport context, where the problem only occurs during the urine testing of athletes; the athletes are usually not faced with this problem in other situations. Urine testing happens unexpectedly, for example, possibly just after athletes have gone to the toilet or after a competition when athletes are still too tense to relax and to be able to pee. The testing procedure itself is another problem: The doping testers have to accompany the athletes into the toilet stall and need to observe the whole process of urinating (National Anti -Doping Agency, 2007). This interferes with most athletes' sense of privacy and causes additional stress.

A search in the sport databases (January 2007) shows that there are no studies investigating this problem. Only one publication could be found, but it focused on the urine testing problem with soldiers. Labbate (1996, 1997) shows that 5% of American soldiers have similar problems.

Therefore, two studies were conducted to gain further information on the problem of psychogenic urine retention during urine testing in sport. The main goal of the first study, which focused on doping testers, was to find out how widespread problems during urine testing are. The second study, which focused directly on the athletes, explored the relation of this problem with paruresis and trait anxiety[4].

Method

In the first study a survey was conducted with N = 37 German doping testers and concerned problems they encountered while testing athletes. The questionnaire included closed-ended questions about the frequency of problematic doping tests and if they occurred more often in younger or older athletes, male or female athletes, and during training or competition testing. Furthermore, the testers were asked for their layman opinion about whether the causes of the problems were of a psychological nature. Testers also had to name the causes athletes communicated to explain these difficulties. The reasons had to be rated on a 5-point-Likert Scale ranging from "1 = rarely" to "5 = frequently," with items such as "I have just been to the toilet" and "I cannot pee with someone there listening."

The second study is based on the results of the first study as well as on interviews with affected athletes. During this study a new questionnaire namely the Psychogenic Urine Retention in Doping Test Situations Inventory (PHD), which investigates specific problems in anti-doping test situations, was developed. It originally consisted of 71 items that are to be rated on a 4 point-Likert scale ranging from "1 = not at all true for me" to "4 = absolutely true for me." After reducing the number of items from 71 to 51, a forced exploratory factor analysis was performed. It shows a 5-factor solution with an explained variance of 59.52%. Factor 1 relates to problems in doping test situations in general with items such as "In doping control situations, urination is a problem for me" (item 1). Factor 2 focuses on "Negative Anticipation" with items such as "As soon as I see the sign of "Anti Doping Test" at the competition, I get a bad feeling" (item 31). Factor 3 refers to items concerning the procedure of doping tests and the athletes' openness to alternative methods, for example item 24: "If there was the possibility to conduct a valid doping test in absence of doping testers, I would prefer this possibility." Anxiety and worries regarding the doping tests are investigated with items like "I am worried that somebody might think in a bad way about me for not being able to urinate during doping tests (item 43)" and load on the fourth factor. Factor 5 relates to three physical reasons of urination problems during doping control situations which serve as control items. Reliabilities of the scales are between $\alpha = .81$ and $\alpha = .60$. Eighty-one athletes completed the newly developed questionnaire as well as the German version of the Paruresis-Scale (PARS, Hammelstein & Pietrowsky, 2005) and the German version of the State-Trait-Anxiety Inventory – Trait (STAI, Laux, Glanzmann, Schaffner & Spielberger, 1970) in an online survey. The Paruresis-Scale consists of two screening items and 13 specific items which investigate psychogenic urine retention problems in public situations on a 5 point – Likert Scale ranging from "0 = almost never" to "4 = almost always". Reliability with Cronbach's Alpha is $\alpha = .94$. Participants were asked to complete this scale only if they agreed with at least one of the screening items. The State-

Trait-Anxiety Inventory – Trait consists of 20 items which investigate the general tendency to experience situations as threatening. Participants have to respond to a list of adjectives, such as "In general, I am happy (Item 10) on a 4 point-Likert scale ranging from "1 = almost never" to "4 = almost always." Reliability assessed with Cronbach's Alpha is α = .90.

Results

Study 1 shows that 36 of 37 doping testers have experienced problems while conducting urine tests with athletes. Significant delays during doping tests happen on average 6.8 times a month (*SD* = 7.6) with variance depending mainly on the average number of monthly tests (*M* = 16.2 each month; *SD* = 12.8). These results indicate that delays occur during 42 % of all monthly urine tests. Univariate variance analysis shows that problems affect men and women equally. Gender differences remain non-significant. Differences between tests performed after training versus after competitions are also non-significant. Moreover, differences concerning the athletes' age could also not be found; however, the only differentiation made was between athletes older and younger than 18 years. In addition to that it was not possible to specify whether the problems occurred on a one time basis or repeatedly. Furthermore, in 32 % of the cases doping testers relate the problems to psychological issues. However, it needs to be considered that these testers are not educated in psychology and therefore can only voice a layman opinion.

The explanation athletes give to the testers to explain their difficulties are manifold. The most important causes listed in figure 1, are "Just been to the toilet" (*M* = 3.9, *SD* = 1.2), "Unable to pee with others watching" (*M* = 3.3, *SD* = 1.3), "Unable to pee with others being around" (*M* = 3.0, *SD* = 1.7) and "Unable to relax" (*M* = 2.4, *SD* = 1.5). Three of the four main reasons can be classified as psychological issues. Other reasons given are more sport specific and include statements like "Too tense due to training / competition" and "Athletes are too dried out."

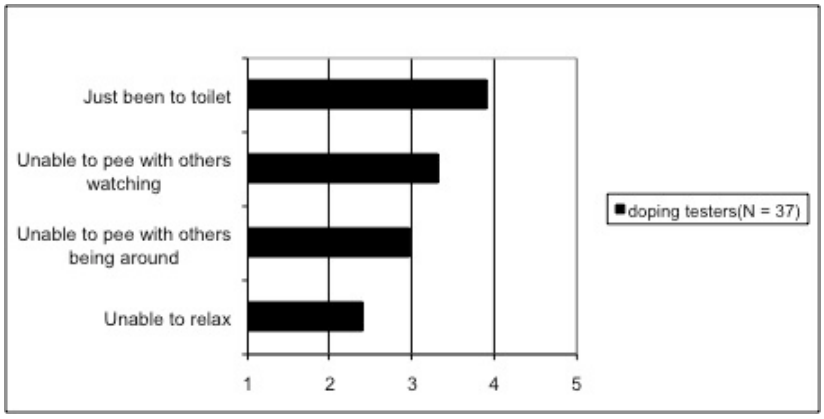

Figure 1: Reasons for urination problems in doping tests given by athletes (1 = rarely; 5 = frequently).

The results of study 2 show that about 58 % of the athletes have already experienced problematic doping test situations; about 80 % of the athletes report about delays in doping test situations. For 45 % of the athletes the urine test procedure took longer than 1 hour. Eighteen and a half % of the athletes felt that their recovery after training/ competition was impaired due to the urine test.

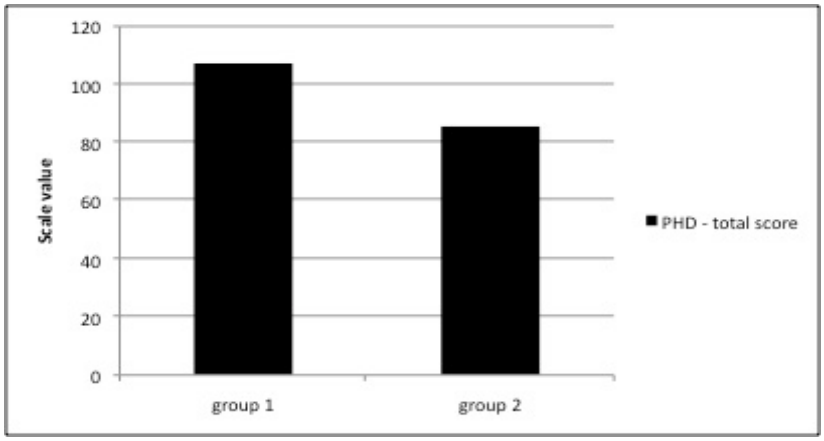

Figure 2: Differences between athletes suffering from paruresis and athletes not suffering from paruresis regarding their total score on the PHD-scale.

Significant positive correlations ($p < .01$) of the PHD – Scale are found with the Paruresis-Scale $r_{(PHD\text{-}PARS)} = .58$ and the State-Trait-Anxiety Inventory $r_{(PHD\text{-}STAI)} = .43$. With regard to athletes with scores on the PARS > 0 indicating they have paruresis, correlations change to $r_{(PHD\text{-}PARS)} = .57$, $p < .01$ and $r_{(PHD\text{-}STAI)} = .30$, $p > .05$. With regard to athletes scoring

= 0 on the PARS scale, the correlation between State-Trait-Anxiety Inventory and PHD-Scale is $r_{(PHD\text{-}STAI)} = .61$, $p < .01$.
An ANOVA between athletes with paruretic problems (group 1) and athletes without paruretic problems (group 2) shows significant differences with regard to the extent of the psychogenic urinary retention problem in anti-doping test situations ($F(1,59) = 9.48$, $p < .01$, $\eta^2 = .14$. This can be seen in Figure 2.

Discussion / Conclusions

Study 1 and 2 are the first to investigate psychogenic urine retention in athletes during doping test situations. In the first study, the results indicate that the problem "urine doping test" really does exist and seems to be quite a general problem without any specificity regarding sex, age or sport situation. In addition, psychological factors seem to play a large role. The results of the second study suggest that urine test problems are related not only to the disorder of paruresis but also to the personality trait of anxiety. Athletes who suffer from paruresis in general, obviously have these problems also in doping test situations. However, the psychogenic urine retention of those athletes not suffering from paruresis seems to be more related to anxiety in general. This shows that psychogenic urine retention in doping tests does not always occur in connection with paruresis. Personality dispositions such as anxiety seem to be of importance as well.
Since the development of the questionnaire is still ongoing, these results can only be seen as preliminary and have to be investigated more closely in later research. Also, cause - effect – relations between personality dispositions and psychogenic urine retention in doping test situations have to be investigated in further studies. All in all, these first results indicate that psychogenic urine retention in sports seems to be a more complex and a more personality based phenomenon than the clinical disorder “paruresis”.

References

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[4] The research project is funded by the German Federal Institute for Sport Science (IIA1-070304/08-09).