

RESEARCH ARTICLE

Does Well-being Matter to Performance? A Case Study

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Abstract

The purpose of the study was to examine the association between well-being and performance over time. Adopting a longitudinal design spanning thirteen competitive games, female university basketball players ($N = 8$) completed measures of well-being prior to each competition. Measures of perceived and actual performance were completed post-game. Results of separate pooled time series regression analyses showed that well-being was not associated with sport performance. Study findings are situated within the sport literature with suggestions for researchers looking to unpack the complex relationship between well-being and performance.

Keywords: Well-Being, Mental Health, Performance, Temporal Dynamic, Student-Athletes.

1. Introduction

Researchers have sought to unearth the psychological resources associated with sport performance (e.g., Lochbaum et al., 2022). This line of inquiry has provided researchers with insights regarding psychological resources linked to better (and worse) sport performance, while simultaneously illuminating gaps. Evident within Lochbaum et al.'s (2022) review, was the absence of research examining the association between well-being and sport performance. This is despite the understanding that the prioritization of athlete well-being is fundamentally important in sport (Giles et al., 2020; Michel et al., 2023). Given that athlete well-being has been linked with the ability to nurture desirable psychological, interpersonal and behavioural skills (Kinoshita et al., 2023), it seems intuitive that well-being can contribute to, as opposed to simply be an outcome, of performance in sport.

Well-being includes pleasant feelings and positive functioning related to the self and interpersonal relationships (Tennant et al., 2007). Athletes have

endorsed the belief that well-being effects their sport performance (e.g., Noguchi et al., 2023). The nature of this relationship, however, may be complex. For example, well-being assessed pre-race was negatively associated performance in the first, but not final, stage of a road race in elite cyclists (Filho et al., 2015). Further, well-being (i.e., positive affect) predicted perceived, but not actual, performance in motocross racers (Komáromi et al., 2024).

One additional gap in the research focused on well-being and performance served as the impetus for this study. Previous studies of well-being in athletes have typically relied on cross-sectional data (e.g., Komáromi et al., 2024; Noguchi et al., 2022) which precludes understanding of the temporal dynamics between variables. The objective of this study was to examine the association between well-being and performance over time in female university basketball players. Given inconsistencies in previous research (Filho et al., 2015; Komáromi et al., 2024), no formal apriori hypotheses were advanced.

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2. Methods

2.1 Participants and Procedures

The sample consisted of female university basketball players ($N = 8$; $M_{age} = 21.00$ years; $SD = 1.85$) from a single U Sport team located in Ontario, Canada. Participants had played on their team on average for 2.66 years ($SD = 0.74$).

This study used a non-experimental, longitudinal design with data collected via Qualtrics. Study protocol was not prospectively registered. Following ethical clearance and the provision of informed consent, participants completed the demographic questionnaire. Items measuring well-being were available 24 hours prior to each U Sport game. Ratings of perceived performance were available for completion for six hours post-game. Data collection commenced at the mid-point of the competitive season and spanned 13 regular season games from January 5, 2024 to February 7, 2024. Actual performance was calculated from publicly accessible game statistics records. Participants were entered into a draw to win one of four \$25.00 (CAD) gift cards.

2.2 Instrumentation

Demographics. Select variables were assessed to describe study participants (e.g., age, years on team).

Well-being. Well-being was measured using the 14-item Warwick Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007) which assesses the extent to which an individual is feeling and functioning well. Responses per item range from 1 (*None of the Time*) to 5 (*All of the Time*). The instructional stem was altered such that well-being was assessed over the last 24 hours given the timing of data collection. Evidence for score validity, reliability and responsiveness of the WEMWBS has been demonstrated (Taggart et al., 2015).

Performance: Perceived performance was assessed via a single-item indicator (Coffee & Rees, 2008). Following the instructional stem, “Considering your basketball performance today”, participants were asked to respond, “Was it a good or bad performance

for you?” on a 5-point Likert scale ranging from 0 (“*Very bad*”) to 4 (“*Very good*”). Actual performance was calculated using Hollinger’s (2005) Game Score formula which accounts for both offensive and defensive indicators on a game-by-game basis.

2.3 Data Analysis

Data were analyzed using IBM SPSS (Version 29). Data were first screened for compliance and missing data. Second, descriptive statistics and estimates of internal consistency (α ; Cronbach, 1951) were calculated. Finally, separate pooled time series analysis (PTSA) were conducted to evaluate temporal trends in well-being and perceived/actual performance as recommended by Soliday et al. (2002) with small samples. A PTSA allows for partialling-out between participant variance while controlling for serial dependence (Soliday et al., 2002). Within PTSA, R-squared values after transformation are elevated and therefore not interpreted. Additional statistical parameters (e.g., B) provided the basis for interpretation (Soliday et al., 2002).

3. Results

Twelve basketball players provided consent. Four athletes were removed for either non-compliance (e.g., provided well-being data for less than 50% of the games) and/or the absence of performance data. No partial non-responders for WEMWBS scores were identified. Consistent with Sonstroem and Bernardo’s (1982) investigation into the relationship between competitive anxiety and performance in female university basketball players, the five athletes with the most playing time were included when actual performance served as the response variable.

Internal consistency estimates for WEMWBS scores ranged from .70–.97 ($M_{\alpha} = .89$; $SD_{\alpha} = .07$). Average WEMWBS scores fell between “below average” and average” ($M = 3.17$; $SD = .44$; $Range = 2–4$; Taggart et al., 2015) and perceived performance was typically “acceptable” ($M = 1.99$; $SD = 0.89$; $Range = 0–4$). Actual performance based on Hollinger’s Game Score averaged 7.90 ($SD = 9.39$; $Range = -4.50–35.50$).

Table 1. Associations Between Well-being and Performance Over Time

Variable	Durbin-Watson	B	SE B	β	t	p
Perceived Performance: $R^2 = .87$, $R^2_{adj} = .85$; $F(9,94) = 67.74^*$						
	1.91	0.07	0.27	0.12	0.28	.78
Actual Performance: $R^2 = .90$, $R^2_{adj} = .89$; $F(6,59) = 87.33^*$						
	2.08	-2.30	2.31	-0.51	-1.00	.32

Note: B = unstandardized beta coefficient; SE = standard error; β = standardized beta coefficient. $^*p < .001$

Table 1 presents the PTSA results. One transformation iteration each was required to control for serial dependence when perceived ($r = 0.05$) and actual ($r = -0.04$) performance served as the response variable. After transformation, the regression equation was non-significant ($p = .78$; $\beta = 0.12$), indicating well-being did not significantly predict perceived performance. With transformation, well-being did not significantly predict actual performance ($p = .32$; $\beta = -0.51$) across the 13 games included in data collection.

4. Discussion

Athletes report that well-being impacts their sport performance (Noguchi et al., 2022). Yet gaps in the literature are evident relative to: 1) The limited understanding of the athlete well-being - performance relationship and 2) The reliance on cross-sectional data that prohibits the assessment of temporal dynamics. To address these gaps, the following research question was addressed: What is the association between well-being and performance over time in female university basketball players?

The key finding emerging from this study was the null association between well-being and sport performance (perceived and actual) across thirteen competitive games. Two points seem worth consideration relative to this observation. First, if enhanced sport performance is the main objective, researchers may want to invest resources into mechanisms with greater evidence to support their utility (Lochbaum et al., 2022). Second, it may be that well-being does not help *all* athletes enhance sport performance. Well-being is a dynamic, not static, entity in athletes (Columbus et al., 2023; Komáromi et al., 2024). One implication is that well-being may facilitate (or diminish) performance in sport for some athletes but have no effect for other athletes. This possibility warrants additional scrutiny. Further, there may be a need to identify the personal (age, experience; Komáromi et al., 2024) and/or competitive (event duration) variables that moderate the well-being – performance relationship in sport.

This study is not without limitations that merit consideration. First, this study relied on data from one U Sport women's basketball team with data collected over six weeks. While single team case studies are not uncommon in sport psychology research (e.g., Columbus et al., 2023), such approaches may be underpowered for null-hypothesis significance testing. Second, this study utilized perceived/actual

measures of performance. Komáromi et al. (2024) included a measure of expected performance in tandem with perceived and actual performance with different associations to pre-race well-being noted. Overall, this study underscores the importance of longitudinal research that embraces multiple assessment points to capture the well-being - performance relationship reported by athletes while simultaneously offering suggestions for researchers moving forward.

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