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Exploring Regular Exercisers' Experiences With Readiness/recovery Scores Produced By Wearable Devices: A Descriptive Qualitative Study

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There is a growing interest in developing exercise programs that are adaptive to individuals' changing contexts and situations. Some consumer wearables aim to guide exercise decisions through 'recovery' or 'readiness' scores, primarily derived from heart rate variability. To date, however, there is limited research on how users interact, interpret and use these scores.

PURPOSE: Understand individuals' experiences using readiness or recovery scores provided by their wearable device.

METHODS: Seventeen regular exercisers self-reported owning and using a Whoop™ band or Oura™ ring for at least 3 months, underwent a one-on-one virtual semi-structured interview. Interviews were recorded, transcribed, and analyzed using reflexive thematic analysis. The emerging themes were supported with 'in-vivo' quotes from our sample.

RESULTS: Our analysis identified six themes, but we focus on three, providing each a thorough exploration and demonstration. Theme 1, 'It's more about how I can make adjustments to optimize my programming,' (MPR) highlights using their wearables as intended, for guiding training purposes (e.g., reducing intensity when recovery scores are low). Theme 2, 'So many things outside of training modifications have changed,' (Misty) indicates users concurrently modify non-exercise behaviors (e.g., sleep, nutrition) to manage and optimize recovery/readiness scores. Within theme 3, 'You can't really capture the complexities of a human on a device,' (Letty) users acknowledge the limitations and errors associated with these devices (e.g., provided scores sometimes incongruent with subjective perceptions), in capturing the complexities of human experiences, necessitating self-reliance to further direct behavioral adjustments.

CONCLUSION: These wearable devices offer a simplified numeric-based approach to passively gauge readiness/recovery status. Users emphasized the importance of self-awareness, flexibility, and personal judgment in their exercise decisions. They viewed their wearables as valuable tools but not infallible authorities.

Understanding these experiences and the psycho-behavioral aspects of user interactions can help create and refine person-adaptive approaches for exercise behavior.

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Former NCAA DIII College Athletes: Perceptions And Plans For Maintaining Exercise Post-Sport

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College athletes in the United States exhibit various declines in physical/mental health following sports retirement. These observed changes in health may be caused by various factors, including reduced exercise rates following the cessation of regular sports training. To date, it is unknown how former athletes' perceptions of health and fitness change after retiring and affect their exercise behavior post-sport.

PURPOSE: The purpose of this study was to explore former Division III (DIII) athletes' perceptions of health and fitness and future plans for exercise maintenance in the absence of sports training.

METHODS: Alumni student-athletes from Hope College (class of 2023) completed semi-structured interviews via Zoom between May-June 2023. Interview transcriptions were analyzed using Consensual Qualitative Research methods to form domains, categories, and core ideas elucidating participants' lived experiences relating to exercise and their perceptions of health.

RESULTS: Participants were 19 former DIII athletes (22±1 years, 37% male, 84% White, 26% Exercise Science). The analysis yielded five domains: "Reasons Why Former Athletes are Exercising", "Shifting Ideas on How to Exercise Without Sports Training", "Barriers that Limit an Active Lifestyle", "Not a Priority", and "Figuring it Out".

CONCLUSION: Former athletes reported less exercise than when still training in college, expected exercise volumes to never reach college-sport levels again, and were generally unconcerned with these declines. A "seasonality" effect was observed; all participants mentioned the need for a post-sport break from exercise, but those who retired in the fall/winter were able to facilitate their behavior due to access to on-campus resources over those who retired in the spring. Former athletes also contended with an influx in autonomy for exercise post-sport; they preferred activities familiar to them, but were open to trying new forms of exercise, and sought to be active with family and friends to stay accountable. Participants were largely unaware of the healthy thresholds dictated by the Physical Activity Guidelines for Adults, and many mentioned needing to expand their knowledge base to improve their future behavior. Researchers may use these results to better prepare athletes for their retirement in the future.

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Exercise Dependence In Team Sport Athletes And Fitness Activities Participants

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PURPOSE: Although regular physical Activity (PA) has positive effects on mental and physical health, excessive exercise could have adverse effects. Exercise dependence (ED) is characterized by excessive training leading to physiological and psychological symptoms. Since excessive exercisers show higher ED risk compared to individuals with lower activity levels, this study aimed to investigate individual's ED levels in team sport athletes and people engaging in fitness activities (FA).

METHODS: Seventy adults (age: 29 ± 10.8 yrs) were allocated in two groups: Team Sport Group (TSG=36 team sport athletes) and FA Group (FAG=34 FA participants). The Exercise Dependence Scale (EDS-21), measuring on a 6-point Likert scale Withdrawal, Tolerance, Reductions in Other Activities, Lack of Control, Continuance, Intention Effects and Time dimensions, was used to assess ED. Mann-Whitney U-test was applied to verify differences (p<0.05) in EDS-21 dimensions

in TSG compared to FAG.

RESULTS: The results of Mann-Whitney U-test are show in Table 1.

Table 1. Mean, Standard Deviation (SD) and Median of EDS-21 dimensions in Team Sport Group and Fitness Activities Group.

EDS-21 dimensions	Team Sport Group		Fitness Activities Group	
	Mean ± SD	Median	Mean ± SD	Median
Withdrawal	9.06 ± 4.09	9.00	9.03 ± 3.32	10.00
Tolerance	12.03 ± 3.79	11.50 *	9.71 ± 3.68	9.50
Reductions in Other Activities	7.31 ± 3.24	6.00 *	4.88 ± 2.14	5.00
Lack of Control	7.75 ± 3.92	7.50	6.59 ± 3.87	5.00
Continuance	8.94 ± 5.17	7.50 *	4.56 ± 2.21	3.00
Intention Effects	8.19 ± 4.11	7.00 *	6.12 ± 2.69	5.50
Time	11.22 ± 3.24	11.00 *	7.56 ± 3.24	7.00

* $p < 0.05$ with respect to Fitness Activities Group.

CONCLUSIONS: Although risk of ED (scores >14 for at least 3 of the 7 dimensions) was not found, TSG scored higher in five dimensions of the EDS-21, indicating a greater propensity to exhibit behaviors which could result in ED. Results could be explained by sport commitment of athletes, requiring large amounts of training to pursue outstanding sport performances, and social pressure, representing a risk for maladaptive exercise behaviors. Conversely, participants engaging in FA might prioritize personal enjoyment, well-being enhancement, and socialization. Findings suggest the need for careful monitoring and psychological support for athletes engaged in sports to prevent adverse effects on health of excessive exercise.

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Understanding Changes In Physical Activity Behaviors Among Collegiate Athletes After Retirement

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PURPOSE: To examine the post-retirement changes in physical activity (PA) behavior and motivation among collegiate student-athletes.

METHODS: Student-athletes in their final year of eligibility from two Midwestern universities were recruited via convenience and reverse snowball sampling. PA was measured immediately after retirement and four months later via accelerometers. Monthly motivation scores were collected using the Behavioral Regulation for Exercise Questionnaire (BREQ-2). To gain more insights into changes in PA behaviors, qualitative interviews were conducted immediately after retirement and four months later. Descriptive statistics and paired t-tests were performed using SPSS version 24.0.

RESULTS: Four out of the initial 63 student-athletes participated in the study, including two female Division I and two male Division III soccer players. Participants showed an increase in sedentary activity from 29.12 hrs/wk \pm 10.25 immediately after retirement to 43.74 hrs/wk \pm 40.29 four months after retirement. Light intensity activity decreased from 58.66 hrs/wk \pm 10.08 to 48.75 \pm 10.48, and moderate intensity activity decreased from 21.64 hrs/wk \pm 4.54 to 20.34 hrs/wk \pm 2.30. One participant significantly decreased their light intensity activity ($p < 0.001$), and two participants significantly increased their sedentary activity ($p = 0.038$; $p < 0.001$). Regarding motivation, amotivation scores were the lowest (baseline: 0.06 \pm 0.125; four month post-retirement: 0.00 \pm 0.00), while autonomous motivation scores were the highest (baseline: 3.32 \pm 0.30; four months post-retirement: 3.47 \pm 0.31). Qualitative interviews immediately after retirement revealed common themes including reduced pressure, significance of PA, and immediate enjoyment. Follow-up interviews at four months revealed themes such as changes in motivation, goals, enjoyment, access to resources, and time management.

CONCLUSIONS: Retired student-athletes displayed higher levels of sedentary behavior and decreased participation in light and moderate activities. Autonomous motivation played a role in shaping their PA behaviors.

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Exercise In Emerging Adults: Health Action Process Approach Correlates And Barriers

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The Health Action Process Approach (HAPA) Model suggests the adoption, initiation, and maintenance of health behaviors (bx) must be conceived of at least having a motivation, and a volition phase. About 34% of adults 18-24 years are meeting the recommendations for both aerobic (AE) and resistance exercise (RE), there is a need to investigate perceived barriers and social-cognitive correlates of exercise to inform behavior change interventions.

PURPOSE: Explore the relationships between Health Action Process Approach (HAPA) constructs and weekly minutes of AE and RE.

METHODS: Participants completed an online survey estimating weekly minutes of AE and RE, as well as Action Self-efficacy (SE), Outcome Expectancies,