sustainability

MDPI

Article

Is Self-Efficacy for Exercise Predictive of Leisure-Time Physical Activity among Police Officers? A Pilot Study

Aspen E. Streetman *, Alex Becker, Emily L. Mailey and Katie M. Heinrich

Department of Kinesiology, Kansas State University, Manhattan, KS 66506, USA
* Correspondence: aestreetman@ksu.edu; Tel.: +1-785-706-8315

Abstract: Leisure-time moderate to vigorous physical activity (MVPA) is an essential indicator of overall health. Given the physical nature of police work, it is critical to understand variables that predict officers' engagement in MVPA. Self-efficacy for exercise (SEE) may be a variable directly related to officer engagement in MVPA. This study aims to examine the relationship between SEE and MVPA among police officers in two departments in a small urban midwestern city. A cross-sectional survey was completed by 32 officers (male = 26, female = 6; aged 35.9 ± 7.1 years). Regression analysis was performed to explore how anthropometric and demographic variables affected SEE's ability to predict MVPA. When combined with SEE, the model containing age had the highest predictive ability of officers' engagement in MVPA (p = 0.011; adjusted R^2 = 0.2145). Adding other predictor variables reduced the model's ability to predict MVPA. SEE significantly predicted officers' engagement in MVPA when age was added as a predictor variable. SEE alone could not predict officers' engagement in MVPA, but adding other variables besides age to the model did not improve its predictive ability in our study. Police organizations should explore wellness initiatives that increase officers' SEE and promote MVPA, particularly as officers age.

Keywords: tactical populations; wellness; aging; physical performance; psychology

Citation: Streetman, A.E.; Becker, A.; Mailey, E.L.; Heinrich, K.M. Is Self-Efficacy for Exercise Predictive of Leisure-Time Physical Activity among Police Officers? A Pilot Study. *Sustainability* **2022**, *14*, 12536. https://doi.org/10.3390/su141912536

Academic Editor: Giuseppe Battaglia

Received: 5 August 2022
Accepted: 29 September 2022
Published: 1 October 2022

1. Introduction

Law enforcement officers' duties can vary dramatically throughout their work shifts [1,2]. An officer may transition from relatively sedentary behavior, such as sitting in a patrol vehicle, to bouts of maximal physical effort rapidly and without warning, all while carrying about 10 kg of occupational load [3]. Thus, adequate physical fitness promoted through physical activity is paramount, even lifesaving, for officers.

Despite the importance of physical fitness and activity, overweight and obesity rates among officers are increasing [4,5], along with increasing rates of related chronic diseases (e.g., diabetes, arthritis, cardiovascular disease, etc.) [3,6]. Occupational exposures, including shift work and high stress, may only exacerbate weight gain [7,8]. Indeed, many officers' physical activity levels decrease as their time on the job increases, suggesting that they lose physical fitness because of their policing vocation [9–11].

It is critical to measure officers' physical activity and examine health behaviors and attitudes given their occupational demands. For example, examining officers' leisure-time physical activity, specifically moderate to vigorous physical activity (MVPA), may provide insight into officers' physical fitness. Engagement in MVPA is associated with better performance of physical functions [12]. Among Finnish police officers, physical activity engagement during young adulthood is predictive of fitness in middle age [13], and higher self-reported physical activity is significantly correlated with aerobic capacity among military personnel [14].

Self-efficacy may be an important indicator of physical activity engagement. Self-efficacy for exercise (SEE) describes the degree to which an individual can initiate and maintain participation in exercise [15]. SEE is positively linked to long-term physical

activity maintenance [15–17]. Higher SEE may be associated with better physical and mental health outcomes [15,17]. Understanding the relationship between officers' MVPA and SEE may help decrease health risks, reduce injury risk, combat attrition, and improve overall occupational performance.

Police organizations recognize the importance of physical fitness for police work. Most officers must pass a physical fitness assessment before earning their badge [18]. Many local and federal law enforcement agencies annually recertify police officers' fitness for duty abilities using physical fitness assessments [3,19]. These assessments can provide information about officers' general health and well-being, injury risk, or ability to complete core occupational tasks to ensure their employability [3]. Annual physical fitness assessments often include a battery of tasks meant to simulate occupational demands, including running, sprinting, jumping, sit-ups, push-ups, pull-ups, and completing an obstacle course [3,20]. While these assessments aim to measure officers' aerobic and anaerobic capacity, strength, endurance, power, agility, speed, and flexibility, they may not sufficiently measure officer physical fitness [21]. Therefore, complementary measures of physical fitness are warranted.

A better estimate of officer fitness might be the amount of time the officer spends engaged in leisure-time MVPA. Weekly physical activity guidelines recommend that adults engage in at least 150 min of moderate aerobic or 75 min of vigorous aerobic activity, or a combination of the two, and muscle-strengthening activity at least two times per week [22]. Moreover, a growing body of literature demonstrates the importance of leisure-time physical activity, especially MVPA, in various populations, including police officers [12,23–26]. MVPA is an essential indicator of overall health and is positively related to enhanced quality of life [27]. MVPA has been shown to reduce lower back pain and improve body composition [12,26,28]. Leisure-time MVPA is the most efficient form of physical activity to improve physical fitness [27]. Given the occupational demands of police work, measuring and enhancing officers' MVPA may prove paramount to predicting officers' physical fitness for duty.

Police officers' SEE is likely related to how much time they spend engaged in MVPA, yet this has not been studied previously. SEE is highly modifiable and could be a target for future interventions to promote police officer engagement in MVPA. Therefore, this research aims to explore the relationship between SEE and MVPA in police officers. It was hypothesized that officers with higher SEE would engage in more MVPA and that officers' demographic and anthropometric measures would be positively related to their SEE and MVPA.

2. Materials and Methods

2.1. Experimental Approach to the Problem

In this pilot study, officers from two police departments in a small urban midwestern city were recruited. A cross-sectional survey design was implemented to explore relationships between MVPA, SEE, and other participant characteristics. The online survey design allowed for broader participant reach while minimizing participant burden.

2.2. Participants

The first department was a county's midsized police department that employed 110 sworn officers. The second was a university's small police department with 16 sworn officers. We contacted the midsized department's public information officer (PIO), asked for assistance gathering survey responses, and emailed the university police department officers directly. The email included information about the survey and a survey flyer with a QR code and a bit-link to our cross-sectional survey. The midsized department's PIO agreed to share the survey with his departmental email distribution lists. The survey was distributed online through Qualtrics (Qualtrics Labs Inc., Provo, UT, USA). Forty officers (31.7%) accessed the survey, while 32 (26.2%; male = 26, female = 6) completed the survey entirely. In addition to being sworn officers, inclusion criteria required the officer to be free

from an injury that would prohibit leisure time physical activity participation. The study received approval from the university's Institutional Review Board, approval #IRB-10914.

2.3. Procedures

The online survey was designed to inform all participants of the study's purpose and confidentiality of their responses before obtaining informed consent, thus beginning the study. After the informed consent, officers answered primary demographic, SEE, and MVPA questions.

2.4. Measurements

2.4.1. Age, Height, and Body Mass

Officers self-reported their age, height, and body mass. Age and weight were reported as whole numbers, and height was reported in feet and inches to the nearest quarter inch. Imperial measurements were converted to metric values for statistical analysis. Previous research has demonstrated the accuracy of self-reported height and weight in police officers [1].

2.4.2. Body Mass Index (BMI)

During analysis, BMI was calculated after converting height and body mass measurements into the appropriate data units. BMI was derived using standard procedures where BMI = body mass (kg)/[height (m)]^2. BMI values were also deemed accurate and reliable, given the known accuracy of police officers' self-reported height and weight [1]. Values were compared with normative data, and the officer's BMI was categorized into four categories: (1) underweight (<18.5 kg/m^2), (2) normal weight (18.5 to <25 kg/m^2), (3) overweight (25.0 to <30 kg/m^2), and (4) obese ($\geq$30.0 kg/m^2).

2.4.3. Godin-Shephard Leisure-Time Physical Activity Questionnaire (GSLTPAQ)

The GSLTPAQ is a brief, widely used self-report measure that assesses the current frequency of participants' engagement in leisure-time physical activity in metabolic equivalents [29–31]. We asked participants: "During a typical 7-day period (a week), how many times on average do you do the following kinds of exercise for more than 15 min during your free time?" [32]. Exercise was classified as strenuous (heart beats rapidly), moderate (not exhausting), and light (minimal effort). The GSLTPAQ was scored according to standard procedures documented in past research, and participants were categorized into three categories: (1) insufficiently active (<14 units), (2) moderately active (14 to 23 units), and (3) active ($\geq$24 units) [32]. Since we were interested in MVPA, we added moderate and strenuous leisure-time physical activity values for this study to assess MVPA in metabolic equivalents.

2.4.4. Self-Efficacy for Exercise (SEE) Questionnaire

The SEE questionnaire is a valid and reliable (Cronbach's alpha 0.91) nine-question questionnaire assessing participants' self-efficacy to overcome barriers to exercise [17]. The questionnaire asked participants: "How confident are you right now that you could exercise three times per week for 20 min if:" and then nine different scenarios (e.g., they were bored with their exercise routine, were bothered by the weather, and felt tired or depressed) were listed [17]. Participants rated their confidence for each scenario on a scale of 0 to 10. The questionnaire was scored according to standard procedures. Scores could range from 0 to 90, with higher scores indicating higher SEE.

3. Results

Participant descriptive statistics are shown in Table 1. The majority (81.3%) of participants were male, accurately representing the policing occupation. On average, male officers were classified as obese by BMI, while female officers were classified as overweight. All officers were classified as active by MVPA units.

Table 1. Participant demographic and anthropometric data.

Characteristic	Gender	*n*	Mean ± SD
Age (years)	Male	26	36.4 ± 7.2
	Female	6	33.8 ± 6.7
Height (cm)	Male	26	170.8 ± 13.3
	Female	6	157.7 ± 4.7
Weight (kg)	Male	26	93.8 ± 17.6
	Female	6	65.4 ± 11.9
Calculated BMI (kg/m^2)	Male	26	32.5 ± 7.1
	Female	6	26.4 ± 5.4
Calculated MVPA (units)	Male	26	47.1 ± 33.0
	Female	6	39.2 ± 35.5

Model summaries are shown in Table 2. The regression analysis determined a weak positive linear association between MVPA and SEE (p = 0.0732; see Figure 1). The addition of BMI or height did not improve SEE's ability to predict MVPA ($MVPA = SEE \times \beta_0 + BMI \times \beta_1$ and $MVPA = SEE \times \beta_0 + HEIGHT \times \beta_1$) with non-significant adjusted R^2 values of 0.04846 (p = 0.185) and 0.04218 (p = 0.2035), respectively. Similarly, neither weight nor sex improved the model's predictive ability ($MVPA = SEE \times \beta_0 + WEIGHT \times \beta_1$ and $MVPA = SEE \times \beta_0 + SEX \times \beta_1$) returning non-significant adjusted R^2 values of 0.05185 (p = 0.1757) and 0.07119 (p = 0.1303). When age ($MVPA = SEE \times \beta_0 + AGE \times \beta_1$) was included in the model, the adjusted R^2 value was 0.2145, and a significant p-value (p = 0.01148) was obtained. The data clearly showed that $MVPA = SEE \times \beta_0 + AGE \times \beta_1$ was the best model in this case. Since the adjusted R^2 for this model (0.2145) was above that of the adjusted R^2 of the original model (0.07316) shown in Table 2, it can be concluded that adding age into the model was more predictive than the other four variables.

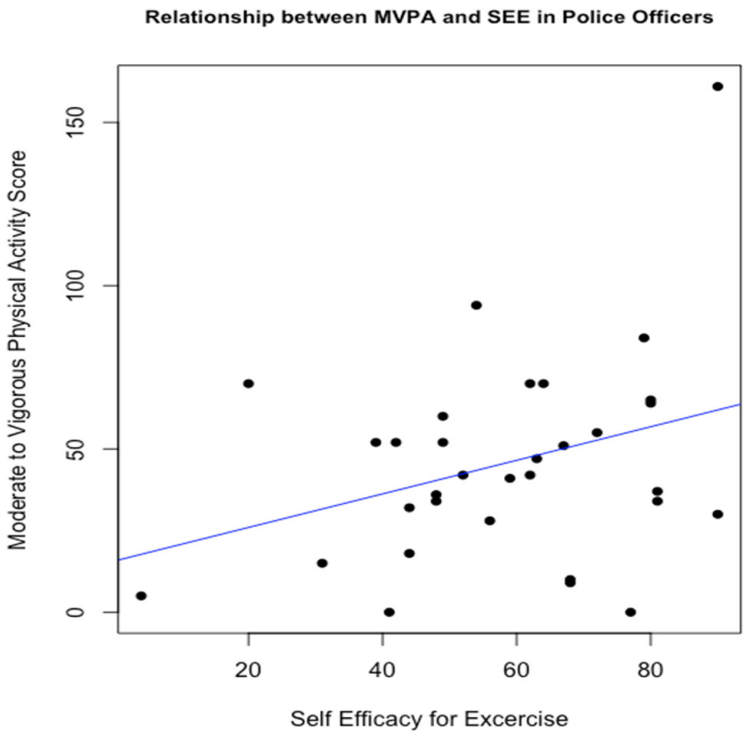

Figure 1. Scatterplot showing the relationship between MVPA and SEE plotted with a line of best fit (n = 32).

Table 2. Model summaries.

Model	Intercept Estimate	First Coefficient Estimate	Second Coefficient Estimate	*p*-Value	*F*-Statistic	Adjusted R^2
$MVPA = SEE \times \beta_0$	15.677	0.277	1.857	0.073	3.447	3.447
$MVPA = SEE \times \beta_0 + AGE \times \beta_1$	75.684	0.620	−1.842	0.011 *	5.232	5.232
$MVPA = SEE \times \beta_0 + SEX \times \beta_1$	23.073	0.576	−8.794	0.130	2.188	2.188
$MVPA = SEE \times \beta_0 + WEIGHT \times \beta_1$	29.763	0.514	−0.159	0.176	1.848	1.848
$MVPA = SEE \times \beta_0 + BMI \times \beta_1$	27.621	0.508	−0.369	0.185	1.789	1.789
$MVPA = SEE \times \beta_0 + HEIGHT \times \beta_1$	27.926	0.515	−0.073	0.204	1.683	1.683

* Indicates statistical significance.

4. Discussion

4.1. Main Findings

This pilot study examined the relationship between SEE and MVPA in police officers serving in a small urban mid-western city. The main findings demonstrate that SEE significantly predicted police officers' engagement in leisure-time MVPA when age was added as a predictor variable. Our results suggest that SEE alone did not significantly predict officers' engagement in MVPA. Interestingly, adding demographic and anthropometric variables other than age to the model did not improve SEE's ability to predict MVPA. Models that included gender, height, weight, or BMI fared worse than the basic regression model. These results are notable because a model's ability to predict a relationship usually increases with the addition of predictor variables [33]. Our hypothesis that officers with higher SEE scores would engage in more MVPA was partially supported. We hypothesized that SEE would predict officers' MVPA, but instead, the relationship between SEE and MVPA was best described with the addition of age as a predictor variable, where MVPA and age were negatively related.

Comparing our results with the current literature is difficult. Much police research focuses on changes in fitness assessment performance and not engagement in MVPA or SEE [10,11,34]. However, one study describes changes in officers' leisure-time physical activity patterns after working for three years in the police force [9]. The retrospective longitudinal study followed police students as they transitioned to officers for the first three years of their policing careers. Physical activity levels and prioritization significantly dropped among participants after serving three years as police officers [9]. These results suggest elements of the policing vocation may hinder an officer's ability to engage in physical activity despite police fitness being critical to policing.

While younger age improved SEE's ability to predict engagement in MVPA in our study, the current literature describes mixed evidence regarding age-related changes in fitness assessments and not MVPA. However, important comparisons are still possible. Orr et al. [10] found differences in physical fitness between new police trainees and serving officers, but age was not a significant predictor of physical fitness assessment results. The authors suggest that the nature of the work environment led to losses in fitness. Similarly, a longitudinal study by Lagestad et al. [11] describes a 10–32% decrease in police officers' performance in four fitness measures (bench press, standing long jump, pull-ups, 3000 m run) after working for 16 years as police officers. However, in contrast to these studies, Dawes et al. [34] found that older police officers (40–49 and 50–59 years) scored much higher on a push-up test than the general population. In their sample of 518 officers, 98% of 40–49 year-olds and 100% of 50–59 year-olds were scored at a "very good" or higher standard compared to normative population standards. Moreover, the existing literature [10,11] positions age as the sole predictor of physical fitness assessment performance, not MVPA. Further prospective research is required to fully understand the relationship between age, physical fitness, and MVPA in police officers.

SEE has been linked to the long-term maintenance of physical activity [16,17]. Thus, individuals with a higher SEE would be expected to engage in more physical activity. However, our results demonstrate only a weak positive relationship between SEE and

MVPA, contrasting a body of research that describes self-efficacy as a strong predictor of physical activity [35–37]. Dalle Grave et al. [36] highlight the importance of SEE in a recent review. They note that psychological predictors of physical activity success include high SEE, while low SEE is a barrier to initiating and maintaining physical activity. Lewis et al. [35] assessed differences between self-efficacy and perceived enjoyment as predictors of physical activity behavior. While perceived enjoyment was important in physical activity initiation, self-efficacy was more predictive of maintenance. Given that the officers in our sample were required to pass a physical fitness assessment before earning their badge (i.e., their occupation required some engagement in physical activity regardless of enjoyment), it seems logical to think that self-efficacy would be a better predictor of physical activity than perceived enjoyment. However, it must be noted that officers' physical activity habits are probably not so consistent that perceived enjoyment is inconsequential, although our study did not measure this. Dineen et al. [37] describe a strong relationship between SEE and MVPA. Interestingly, SEE mediated adherence to exercise 12 months post-exercise intervention among participants in a moderate-intensity circuit training group [37]. However, among the study's high-intensity interval group, SEE did not mediate exercise adherence at the same timepoint [37]. SEE's ability to predict engagement in physical activity is documented positively, but the extent to which SEE alone impacts physical activity initiation and maintenance is less clear, as was demonstrated by our results. Additionally, we were not adequately powered for sufficient generalizability as a pilot study.

Lastly, gender and anthropometric predictor variables did not improve our model's predictive ability. This result is surprising and contrasts with a relatively large body of literature describing physical activity gender differences and decrements in physical fitness assessment performance associated with higher weight and BMI [38–41]. Much of the comparative literature explores the relationship between these predictor variables and physical fitness assessments, not MVPA alone and without the addition of SEE. Therefore, it is critical to make this distinction when positioning our findings within the current body of literature. Gender differences are noted in a couple of studies examining physical fitness assessment performance in police officers [10,11]; however, many studies exclude data from females due to small sample sizes. While we did not exclude females from our analysis, we only had six female survey respondents, which did not allow us to examine gender differences. Thus, gender may have played a more significant role in our results if we had a larger number of female participants.

4.2. Strengths and Limitations

Some study strengths and limitations should be noted. Our pilot study is the first to our knowledge to investigate the relationship between SEE and MVPA in police officers. We add important insight into the relationship between SEE and MVPA in police officers. We used proven measures, including the SEE questionnaire and the GSLTPAQ. Both measures attempt to add a temporal element (i.e., during a typical week) that may help reduce recall bias. However, both questionnaires rely on self-reported physical activity data. The GSLTPAQ gives examples of vigorous, moderate, and light activities, but muscle-strengthening activities were not explicitly listed. Officers may have contextualized their physical activity according to their perception of it, especially muscle-strengthening activities. Moreover, our cross-sectional design only allowed us to capture a snapshot of officers' MVPA and SEE, thus precluding us from making causal inferences. As a pilot study, we were geographically limited to a smaller sample size. Our response rate was 31.7%, but of those invited to complete the survey, only 26.2% completed it. Thus, our study results may not generalize to our population as a whole or officers in other police departments. Using objective measures of MVPA, such as accelerometer data, may allow for a more complete understanding of the relationship between SEE and MVPA. Qualitative interview data may also further explain this relationship. Future research should also longitudinally investigate the relationships between MVPA, SEE, and fitness assessment performance over time.

4.3. Practical Applications

Police organizations could assess leisure-time physical activity, especially MVPA, to better understand an officer's overall fitness. SEE could be considered when assessing MVPA engagement. Police organizations could implement policies that allow exercise while on the clock and provide access to exercise equipment on-site to increase officers' SEE and engagement in MVPA. Wellness initiatives that increase SEE, such as exercise tracking worksheets, department fitness events, or motivational interviewing, may promote officers' engagement in MVPA. Lifestyle and nutrition counseling could be offered through police organizations to augment officer well-being beyond improving SEE or increasing engagement in MVPA.

5. Conclusions

The nature of police work requires physical fitness. Officers are exposed to many health-related risks, including shift work and high stress, that may decrease their ability to respond to an altercation or incident. Moreover, officers may transition from a nearly sedentary state to high-intensity activity at a moment's notice. Officers' physical fitness remains critical to ensure they can meet the job's physical demands, but a deeper understanding of their engagement in MVPA is required. We found a weak positive relationship between SEE and MVPA that was strengthened by adding age as a predictor variable. This study adds to a growing body of knowledge that looks beyond annual fitness assessments to leisure-time physical activity, specifically MVPA. Most officers in our study were overweight or obese, yet they passed their annual fitness assessment. The disconnect between fitness assessment performance and physical fitness is not ideal and does not support the long-term sustainability of a capable workforce, warranting further exploration. With an improved understanding of officers' ability to engage in physical activity, police organizations can implement effective policies that promote fitness and well-being in this essential population, especially as they age.

Author Contributions: Conceptualization, A.E.S. and K.M.H.; methodology, A.E.S., E.L.M. and K.M.H.; software, A.E.S. and A.B.; validation, A.E.S. and A.B.; formal analysis, A.E.S. and A.B.; investigation, A.E.S.; resources, A.E.S.; data curation, A.E.S.; writing—original draft preparation, A.E.S. and A.B.; writing—review and editing, A.E.S., A.B., E.L.M. and K.M.H.; visualization, A.E.S. and A.B.; supervision, E.L.M. and K.M.H.; project administration, K.M.H.; funding acquisition, not applicable. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Kansas State University (protocol code IRB-10914 and 5 November 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available from the corresponding author.

Acknowledgments: The authors gratefully acknowledge the contribution of Murry Streetman for his law-enforcement-specific expertise in creating the survey instrument and for his edits to the manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Dawes, J.; Lockie, R.; Kukić, F.; Čvorović, A.; Kornhauser, C.; Holmes, R.; Orr, R. Accuracy of Self-Reported Height, Body Mass and Derived Body Mass Index in a Group of United States Law Enforcement Officers. *NBP J. Crim. Law* **2019**, *24*, 7–15. [CrossRef]
2. Davis, M.R.; Easter, R.L.; Carlock, J.M.; Weiss, L.W.; Longo, E.A.; Smith, L.M.; Dawes, J.J.; Schilling, B.K. Self-Reported Physical Tasks and Exercise Training in Special Weapons and Tactics (SWAT) Teams. *J. Strength Cond. Res.* **2016**, *30*, 3242–3248. [CrossRef]
3. Orr, R.M.; Lockie, R.; Milligan, G.; Lim, C.; Dawes, J. Use of Physical Fitness Assessments in Tactical Populations. *Strength Cond. J.* **2022**, *44*, 106–113. [CrossRef]

4. Kuehl, K.S.; Elliot, D.L.; MacKinnon, D.P.; O'Rourke, H.P.; DeFrancesco, C.; Miočević, M.; Valente, M.; Sleigh, A.; Garg, B.; McGinnis, W.; et al. The SHIELD (Safety & Health Improvement: Enhancing Law Enforcement Departments) Study: Mixed Methods Longitudinal Findings. *J. Occup. Environ. Med.* **2016**, *58*, 492–498. [CrossRef]
5. Ćopić, N.; Kukić, F.; Tomić, I.; Parčina, I.; Dopsaj, M. The Impact of Shift Work on Nutritional Status of Police Officers. *NBP J. Crim. Law* **2020**, *25*, 3–14. [CrossRef]
6. Da Silva, F.C.; Hernandez, S.S.S.; Gonçalves, E.; Arancibia, B.A.V.; Da Silva Castro, T.L.; Da Silva, R. Anthropometric Indicators of Obesity in Policemen: A Systematic Review of Observational Studies. *Int. J. Occup. Med. Environ. Health* **2014**, *27*, 891–901. [CrossRef]
7. Barbadoro, P.; Santarelli, L.; Croce, N.; Bracci, M.; Vincitorio, D.; Prospero, E.; Minelli, A. Rotating Shift-Work as an Independent Risk Factor for Overweight Italian Workers: A Cross-Sectional Study. *PLoS ONE* **2013**, *8*, e63289. [CrossRef]
8. Ménard, K.S.; Arter, M.L. Stress, Coping, Alcohol Use, and Posttraumatic Stress Disorder among an International Sample of Police Officers: Does Gender Matter? *Police Q.* **2014**, *17*, 307–327. [CrossRef]
9. Lagestad, P.; van den Tillaar, R. Longitudinal Changes in the Physical Activity Patterns of Police Officers. *Int. J. Police Sci. Manag.* **2014**, *16*, 76–86. [CrossRef]
10. Orr, R.M.; Dawes, J.J.; Pope, R.; Terry, J. Assessing Differences in Anthropometric and Fitness Characteristics between Police Academy Cadets and Incumbent Officers. *J. Strength Cond. Res.* **2018**, *32*, 2632–2641. [CrossRef]
11. Lagestad, P.; Jenssen, O.R.; Dillern, T. Changes in Police Officers' Physical Performance after 16 Years of Work. *Int. J. Police Sci. Manag.* **2014**, *16*, 308–317. [CrossRef]
12. Lai, T.F.; Liao, Y.; Lin, C.Y.; Huang, W.C.; Hsueh, M.C.; Chan, D.C. Moderate-to-Vigorous Physical Activity Duration Is More Important than Timing for Physical Function in Older Adults. *Sci. Rep.* **2020**, *10*, 21344. [CrossRef] [PubMed]
13. Sörensen, L.; Smolander, J.; Louhevaara, V.; Korhonen, O.; Oja, P. Physical Activity, Fitness and Body Composition of Finnish Police Officers: A 15-Year Follow-up Study. *Occup. Med. (Chic. Ill.)* **2000**, *50*, 3–10. [CrossRef] [PubMed]
14. de la Motte, S.J.; Welsh, M.M.; Castle, V.; Burnett, D.; Gackstetter, G.D.; Littman, A.J.; Boyko, E.J.; Hooper, T.I. Comparing Self-Reported Physical Activity and Sedentary Time to Objective Fitness Measures in a Military Cohort. *J. Sci. Med. Sport* **2019**, *22*, 59–64. [CrossRef] [PubMed]
15. Rajati, F.; Sadeghi, M.; Feizi, A.; Sharifirad, G.; Hasandokht, T.; Mostafavi, F. Self-Efficacy Strategies to Improve Exercise in Patients with Heart Failure: A Systematic Review. *ARYA Atheroscler.* **2014**, *10*, 319–333.
16. Nigg, C.R.; Borrelli, B.; Maddock, J.; Dishman, R.K. A Theory of Physical Activity Maintenance. *Appl. Psychol.* **2008**, *57*, 544–560. [CrossRef]
17. Resnick, B.; Jenkins, L.S. Testing the Reliability and Validity of the Self-Efficacy for Exercise Scale. *Nurs. Res.* **2000**, *49*, 154–159. [CrossRef] [PubMed]
18. Reaves, B.A. *State and Local Law Enforcement Training Academies, 2013*; Office of Justice Programs: Washington, DC, USA, 2016.
19. Anderson, G.S. Police Officer Physical Ability Testing: Re-Validating a Selection Criterion. *Policing* **2001**, *24*, 8–31. [CrossRef]
20. Marins, E.F.; David, G.B.; Del Vecchio, F.B. Characterization of the Physical Fitness of Police Officers: A Systematic Review. *J. Strength Cond. Res.* **2019**, *33*, 2860–2874. [CrossRef] [PubMed]
21. Beck, A.Q.; Clasey, J.L.; Yates, J.W.; Koebke, N.C.; Palmer, T.G.; Abel, M.G. Relationship of Physical Fitness Measures vs. Occupational Physical Ability in Campus Law Enforcement Officers. *J. Strength Cond. Res.* **2015**, *29*, 2340–2350. [CrossRef]
22. U.S. Department of Health and Human Services. *Physical Actvity Guidelines for Americans*; U.S. Department of Health and Human Services: Washington, DC, USA, 2018.
23. Kukić, F.; Heinrich, K.M.; Koropanovski, N.; Poston, W.S.C.; Čvorović, A.; Dawes, J.J.; Orr, R.; Dopsaj, M. Differences in Body Composition across Police Occupations and Moderation Effects of Leisure Time Physical Activity. *Int. J. Environ. Res. Public Health* **2020**, *17*, 6825. [CrossRef]
24. Van den Berge, M.; Van Oostrom, S.H.; Van der Molen, H.F.; Robroek, S.J.W.; Hulshof, C.T.J.; Van der Beek, A.J.; Proper, K.I. Do Overweight/Obesity and Low Levels of Leisure-Time Vigorous Physical Activity Moderate the Effect of Occupational Physical Activity on Self-Rated Health of Construction Workers? *Int. Arch. Occup. Environ. Health* **2022**, *95*, 465–475. [CrossRef] [PubMed]
25. Kerner, I.; Rakovac, M.; Lazinica, B. Leisure-Time Physical Activity and Absenteeism. *Arh. Hig. Rada Toksikol.* **2017**, *68*, 159–170. [CrossRef] [PubMed]
26. Vuković, M.; Kukić, F.; Čvorović, A.; Janković, D.; Prćić, I.; Dopsaj, M. Relations between Frequency and Volume of Leisure-Time Physical Activity and Body Composition in Police Officers. *Res. Q. Exerc. Sport* **2020**, *91*, 47–54. [CrossRef]
27. Nayor, M.; Chernofsky, A.; Spartano, N.L.; Tanguay, M.; Blodgett, J.B.; Murthy, V.L.; Malhotra, R.; Houstis, N.E.; Velagaleti, R.S.; Murabito, J.M.; et al. Physical Activity and Fitness in the Community: The Framingham Heart Study. *Eur. Heart J.* **2021**, *42*, 4565–4575. [CrossRef]
28. Pinto, R.Z.; Ferreira, P.H.; Kongsted, A.; Ferreira, M.L.; Maher, C.G.; Kent, P. Self-Reported Moderate-to-Vigorous Leisure Time Physical Activity Predicts Less Pain and Disability over 12 Months in Chronic and Persistent Low Back Pain. *Eur. J. Pain* **2014**, *18*, 1190–1198. [CrossRef]
29. Mailey, E.L.; Dlugonski, D.; Hsu, W.W.; Segar, M. Goals Matter: Exercising for Well-Being but Not Health or Appearance Predicts Future Exercise among Parents. *J. Phys. Act. Health* **2018**, *15*, 857–865. [CrossRef]

30. Amireault, S.; Godin, G. The Godin-Shephard Leisure-Time Physical Activity Questionnaire: Validity Evidence Supporting Its Use for Classifying Healthy Adults into Active and Insufficiently Active Categories. *Percept. Mot. Skills* **2015**, *120*, 604–622. [CrossRef]
31. Chow, S.K.Y.; Choi, E.K.Y. Assessing the Mental Health, Physical Activity Levels, and Resilience of Today's Junior College Students in Self-Financing Institutions. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3210. [CrossRef]
32. Godin, G. The Godin-Shephard Leisure-Time Physical Activity Questionnaire. *Health Fit. J. Canada* **2011**, *4*, 18–22. [CrossRef]
33. Allen, J.P. Predictor Variable. In *Encyclopedia of Research Design*; Salkind, N., Ed.; SAGE Publications, Inc.: Thousand Oaks, CA, USA, 2010; pp. 1079–1081. ISBN 9781412961271.
34. Dawes, J.J.; Orr, R.M.; Brandt, B.L.; Conroy, R.L.; Pope, R.R. The Effect of Age on Push-up Performance amongst Male Law Enforcement Officers. *J. Aust. Strength Cond.* **2016**, *24*, 23–27.
35. Lewis, B.A.; Williams, D.M.; Frayeh, A.; Marcus, B.H. Self-Efficacy versus Perceived Enjoyment as Predictors of Physical Activity Behaviour. *Psychol. Health* **2016**, *31*, 456–469. [CrossRef]
36. Dalle Grave, R.; Calugi, S.; Centis, E.; El Ghoch, M.; Marchesini, G. Cognitive-Behavioral Strategies to Increase the Adherence to Exercise in the Management of Obesity. *J. Obes.* **2011**, *2011*, 348293. [CrossRef]
37. Dineen, T.E.; Locke, S.R.; Cranston, K.D.; Beauchamp, M.R.; Jung, M.E. Self-Regulatory Efficacy and Long-Term Physical Activity Engagement: Examining Mediators from a Randomized Trial. *Psychol. Sport Exerc.* **2021**, *56*, 102001. [CrossRef]
38. Bloodgood, A.M.; Dawes, J.J.; Orr, R.M.; Stierli, M.; Cesario, K.A.; Moreno, M.R.; Dulla, J.M.; Lockie, R.G. Effects of Sex and Age on Physical Testing Performance for Law Enforcement Agency Candidates: Implications for Academy Training. *J. Strength Cond. Res.* **2021**, *35*, 2629–2635. [CrossRef]
39. Canetti, E.F.D.; Dawes, J.J.; Drysdale, P.H.; Lockie, R.; Kornhauser, C.; Holmes, R.; Schram, B.; Orr, R.M. Relationship between Metabolic Fitness and Performance in Police Occupational Tasks. *J. Sci. Sport Exerc.* **2021**, *3*, 179–185. [CrossRef]
40. Dawes, J.J.; Lindsay, K.; Bero, J.; Elder, C.; Kornhauser, C.; Holmes, R. Physical Fitness Characteristics of High vs. Low Performers on an Occupationally Specific Physical Agility Test for Patrol Officers. *J. Strength Cond. Res.* **2017**, *31*, 2808–2815. [CrossRef]
41. Lockie, R.G.; Carlock, B.N.; Ruvalcaba, T.J.; Dulla, J.M.; Orr, R.M.; Dawes, J.J.; McGuire, M.B. Skeletal Muscle Mass and Fat Mass Relationships with Physical Fitness Test Performance in Law Enforcement Recruits before Academy. *J. Strength Cond. Res.* **2021**, *35*, 1287–1295. [CrossRef]