

**Investigating the Moderating Role of Humanity on the Relationship between Football
Participation and Mental Well-Being**

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Abstract

The positive impact of sports participation on mental health and the benefit of using one's character strength to one's advantage are two topics that, separately, have been well-researched. However, research combining these two topics by exploring which moderating effect character strengths have on the relationship between sports participation and mental well-being is scarce. This study focuses on exploring the moderating role of the character virtue humanity (consisting of the strengths love, kindness, and social intelligence), based on the VIA character strengths classification by Peterson and Seligman (2004), on the relationship between weekly football participation and mental well-being. 57 people (61.40 % M) participated in the study by completing a questionnaire that investigated their weekly football activity, their score on the character virtue humanity and their level of mental well-being. The results showed a positive but not significant correlation between weekly football participation and mental well-being, and the virtue humanity did not moderate this relationship, nor did the three strengths individually. Nevertheless, the results showed a high score of humanity in the participants, indicating that people who possess the virtue humanity tend to regularly participate in the team sport football, where they are able to put their strengths to use.

Introduction

Sports Participation

Participation in sports is linked to a variety of meaningful health benefits. While physical health improvements are often emphasised, significant psychological benefits come with involvement in sports, such as improved quality of life, higher self-confidence, and decreased symptoms of depression and anxiety (Andersen et al., 2019). Team sports participation, in particular, has been shown to be effective at improving mental health outcomes because of its social nature (Easterlin et al., 2019). For example, people engaging in team sports experience increased social support and a sense of community within their team. This has been shown to increase long-term commitment to the sport since the players experience a sense of responsibility towards the other team members (Easterlin et al., 2019). Additionally, Andersen et al. (2019) concluded that people involved in team sports experience a sense of belonging, higher self-esteem, and a closer social network - all of which contribute to a higher level of mental well-being (Andersen et al., 2019). Overall, team sports participation has been shown to correlate positively with mental well-being.

Football

The most commonly known and widespread team sport worldwide is football (Gurau et al., 2023). A wide range of people participate, from amateur-level to elite-level players. In Europe, amateur footballers represent the largest body of athletes (Zepp et al., 2021). Past studies on the effect of football participation on mental well-being have primarily focused on professional players. However, significant differences exist between amateurs and professionals which potentially change the way in which mental well-being is affected by football participation. For example, elite-level players have a lower injury incidence rate due to receiving more attention from their coaches regarding their physical condition compared to amateurs (Gurau et al., 2023). In addition, they receive sport psychological help, whereas

amateur players get little to none (Zepp et al., 2021). Such differences may influence the positive effect of football participation on mental well-being. Since amateur footballers represent the largest part of athletes but existing research on their mental well-being is scarce, the focus of this study lies on amateur-level footballers. In general, participation in football creates strong social networks and has been shown, particularly because of its social nature, to have a significant positive effect on mental health (Zuckerman et al., 2021).

Mental Health in Young Adults

Optimal mental health is defined by the World Health Organisation (2022) as “a state of mental well-being that enables people to cope with the stresses of life, realise their abilities, learn well and work well, and contribute to their community.” Mental health is a complex subject since it depends on different factors - biological, psychological and sociocultural aspects all play an important role (Eriksson et al., 2018).

The mental well-being of young adults has been declining rapidly in recent years (Horigian et al., 2021). Research by Luijten et al. (2019) found that 10 % of Dutch adolescents already show signs of mental illness – a number that is expected to increase with age. They examined the mental well-being of Dutch adolescents and found a median of 51. The decline in mental well-being among young adults is likely caused by a multitude of factors. One factor affecting their mental well-being negatively is the various challenges that the transition from adolescence to adulthood brings, such as periods of high stress, loneliness, academic challenges, financial pressure, and uncertainty about the future (Lee et al., 2018). On top of such challenges, young adults are confronted with problems that no previous generation had to face. A pandemic, economic uncertainties, and climate change are examples of such problems, causing uncertainty about the future (Fusar-Poli et al., 2021). In the early, formative years, suboptimal mental health is especially harmful since it limits the capacity to fulfil one’s full potential. Young adults suffering from mental problems have higher risks of

mortality for any reason (including suicide), leading to a decrease in life expectancy of 10 to 20 years (Fusar-Poli et al., 2021).

Furthermore, the COVID-19 pandemic has taken a toll on the mental health of young adults. Studies have shown significant increases in mental health symptoms and loneliness, and significant decreases in social connectedness since the pandemic (Horigian et al., 2021). It has been shown that people who are lonely are more likely to have low levels of mental well-being. Young adults between 18 and 30 years old are an especially vulnerable group. At this age, the focus often lies on personal growth, education, and career building. It is a phase that puts social connections, such as family, friends, or colleagues, in the background, further increasing the risk of loneliness and a lack of social connection (Lee et al., 2020). On the whole, today's young adults are facing an abundance of challenges that are taking a toll on their mental health.

Mental Well-Being in Football Players

Two factors that affect young adults' mental well-being adversely are social isolation and loneliness (Lee et al., 2018). A possible strategy to mitigate these factors might be regular participation in football. Playing football has been shown to positively affect mental well-being by increasing self-confidence, improving the perception of the physical self, and providing a sense of belonging, social support, and connectedness (Murray et al., 2021; Zuckerman et al., 2021). Additionally, it reduces mental health symptoms and decreases stress (Murray et al., 2021). Overall, this may lead to significant improvements in young adults' level of mental well-being. Various psychological approaches exist that aim to improve a person's mental well-being. An approach used to enhance well-being by increasing awareness of one's strengths is the *Values in Action Inventory of Strengths*.

Values in Action (VIA) Inventory of Strengths

The *VIA Inventory of Strengths* is a classification of 24 character strengths ubiquitous across cultures and time (Peterson, 2006). Which and to what extent a person possesses a given character strength differs. Since every strength manifests itself in different life situations, how much value a person derives from their character strengths may depend on their situation and circumstances (Schutte & Malouff, 2019). The VIA questionnaire helps to gain an understanding of which strengths someone possesses. After completing this questionnaire, a personal ranking of strengths is provided which enables the individual to improve their life by giving them the opportunity to reflect on their strengths and how to optimally incorporate them into their life, leading to positive outcomes and better mental health. Optimal use of character strengths has been found to lead to a variety of health benefits, such as an increased sense of meaning in life, better self-perception, positive affect, higher (subjective) well-being, and higher self-esteem (Schutte & Malouff, 2019). However, if a person is not aware of their own, distinct set of character strengths, they may not be using them optimally in their everyday life by exposing themselves to situations in which they can display their strengths. Therefore, focusing on the positive aspects of one's character by making use of strengths is a crucial aspect of leading a fulfilled life and increasing mental well-being (Peterson & Seligman, 2004).

Humanity

The 24 character strengths of the VIA classification can be seen as the ingredients of the six core virtues wisdom, courage, humanity, justice, temperance, and transcendence. These virtues are pervasively valued by religious and philosophical traditions; they are what make up good character all over the world (Donaldson et al., 2011). Humanity is a virtue that primarily manifests itself in relationships with other people. It is made up of interpersonal strengths that cause the person to have an affinity towards “tending and befriending” others

(Donaldson et al., 2011). The three strengths that make up humanity are love, kindness, and social intelligence.

Love, Kindness, and Social Intelligence

The strength love is characterised by having strong positive feelings, being committed, and being willing to sacrifice for the other person. It involves the sharing of aid and genuine acceptance of the other person (Peterson & Seligman, 2004). It shows itself in all close and caring relationships, and in particular reciprocated ones. Kindness is another strength that is expressed in the relationship with others. People with this quality feel a pervasive need to be nice towards other people, ranging from strangers to people with whom they are in a long-established relationship. A person with social intelligence is aware of their own and other's motives and emotions, knows how to fit into various social situations, and can easily read other people (Peterson & Seligman, 2004).

Research by Martínez-Martí and Ruch (2014) has shown that the strengths love and social intelligence are positively and significantly correlated with well-being at all ages, and even more significantly in young adults. Strengths that foster affiliation and commitment to others seem to be particularly important for well-being during young adulthood. Furthermore, people who use their strengths have been shown to be 18 times more likely to be flourishing than those who use their strengths the least (Niemić, 2020). Because of the social nature of playing a team sport, members of football teams who score high on the virtue humanity may thrive in their team environment due to being able to use their strengths love, kindness, and social intelligence regularly.

Previous research has focused on the relationship between football participation and mental health. However, little is known about the moderating role that humanity has in this relationship. The aim of this research is to explore the moderating effect that the virtue humanity has on the relationship between football participation and mental well-being. The

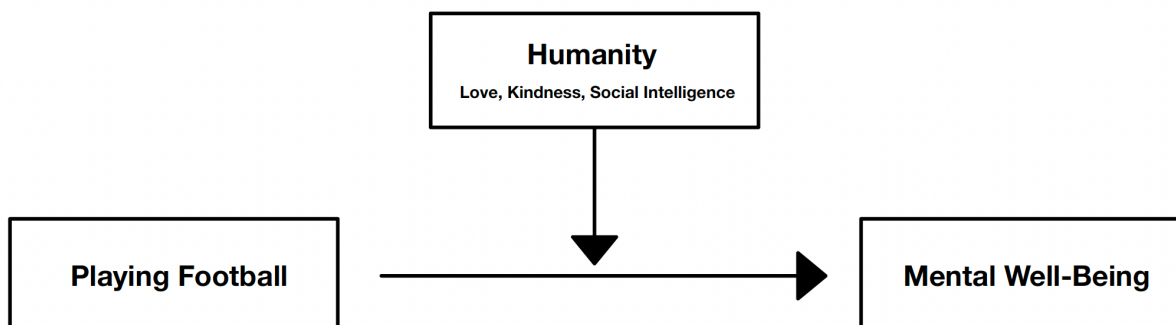
target group is people aged between 18 and 30 years who play a minimum of one hour of amateur-level football per week.

The following hypotheses emerged:

- I. There is a significant positive correlation between the weekly hours spent playing football and the level of mental well-being.
- II. The virtue humanity significantly and positively moderates the relationship between the weekly hours spent playing football and mental well-being.
- III. The positive correlation between the weekly hours spent playing football and mental well-being is moderated by the character strengths love, kindness, and social intelligence.

Figure 1

The Hypothesised Relationships between the Three Variables “Playing Football,” “Mental Well-Being” and “Humanity”



Methods

Study Design

This quantitative study aims to explore the moderating role of the character virtue humanity in the relationship between weekly football participation and mental well-being in young adults. Three variables will be investigated in this research: weekly football participation, the virtue humanity, and mental well-being. The questionnaire for this study was developed as part of a project together with three other researchers, two of which focused on gym participation instead of football.

Participants

In this study, an a priori power analysis using G*Power (Faul et al., 2007) was conducted to determine the required sample size. The analysis was based on a two-tailed t-test with an expected medium effect size (Cohen's $d = 0.2$), an alpha level of 0.05, and a desired power of 0.90. The results indicated that a minimum sample size of 55 participants would be necessary to detect a statistically significant effect. Therefore, the aim is to recruit a sample of 55 people for this study. To be included in this research, participants must be aged between 18 and 30 years and participate in football for at least one hour per week.

Materials

At the beginning of the survey, participants will be tested on the inclusion criteria by being asked which sport they participate in (Gym, Football, other). If the option 'other' is chosen, the questionnaire will end immediately. 'Gym' responses will not be used for this study but by the two other researchers who use the same questionnaire but focus on gym participation in their study. If participants meet the inclusion criteria of this study by choosing 'Football', the questionnaire will show the remaining questions, which are several questions to measure their demographics, such as age, gender (male, female), and nationality (Dutch, German, other). Following these questions, participants will be presented with a

survey that includes several questions regarding their football participation, the *Global Assessment of Character Strengths* (GACS-24) to measure their score on the virtue humanity, and the *Mental Health Continuum Short Form* (MHC-SF) to measure their mental well-being.

Sports Participation

To evaluate the survey participants' football participation, three items will enquire how many years, how many days per week, and how many hours per week the participants have been practising their sport, respectively. The scale for the number of years ranges from zero to 30. For the number of days per week, participants will be able to choose from zero to seven and, and for the number of hours per week, one to 40.

Global Assessment of Character Strengths - 24 (GACS-24)

The *Global Assessment of Character Strengths - 24* (GACS-24) will be used to characterise the strengths of the study participants. Only the three items of the GACS-24 that contribute to the virtue humanity were selected from its inventory, namely love, kindness, and social intelligence. Kindness, for instance, was measured with the item, "You do good things for people; you help and care for others; you are generous and giving; you are compassionate". The participants will be able to respond using a seven-point Likert scale ranging from "0 = Very strongly disagree" to "6 = Very strongly agree". The scales' internal consistency ($\alpha = .75$) and test-retest reliability ($r = .78$) have been shown to be adequate (Shimai & Urata, 2023).

Mental Health Continuum Short Form (MHC-SF)

Fourteen items that measure each aspect of well-being (emotional, social, psychological) make up the MHC-SF. Every item starts with "In the past month, how often did you feel..." and ends, for instance, with "satisfied with life?" or "that you had warm and trusting relationships with others?". All items will be scored on a standardised six-point

Likert scale from “0 = Never” to “5 = Everyday”. The given answers will be summed and divided by the total number of 14 elements to arrive at an overall score which can reach up to six. Higher scores are indicative of better mental health (Lamers et al., 2010). High internal consistency ($\alpha = .89$) and less fortunate test-retest reliability ($r = .68$) has been demonstrated by the MHC-SF (Lamers et al., 2010).

Procedure

Prior to the start of data collection, the project was granted approval by the University of Twente’s BMS ethics committee with request number 240407. The researchers will use the method of convenience sampling to find participants, visiting three football clubs in Enschede and asking their members to digitally fill in the survey via a QR code after they have completed training. This approach involves selecting individuals who are readily available and accessible, in this case football players, without using a specific randomisation method. Moreover, a link to the survey will be published on the researchers' Instagram profiles to reach more participants. In addition to convenience sampling, the study will also be uploaded to the University of Twente’s BMS faculty Sona-System test subject pool where students will be able to earn 0.25 Sona credit points for participating in the study. An information letter and consent form will precede the survey’s demographic questions. Subsequently, the items from the sports participation, the GACS-24, and the MHC-SF will be presented separately. The survey is supposed to require five to ten minutes to complete, and participants will be assured that their answers will be kept confidential.

Data Analysis

The study will conduct several R Studio analyses to examine the moderating role of humanity in the relationship between sports and mental well-being. The packages used for this research will consist of readr, psych, janitor, tidyverse, dplyr, mirt, modelr, broom, and foreign. First, Cronbach’s alpha will be computed to examine the internal consistency of the

constructs. Then, the demographic characteristics of the sample will be summarised using descriptive statistics which comprise the calculation of frequencies, percentages, means (M), and standard deviations (SD). The correlation between the weekly hours of football the participants play and their mental well-being will be computed. To assess the main effects, a regression model will be constructed, with mental well-being as the dependent variable and weekly hours of football as the predictor. The moderation analysis will involve creating an interaction term consisting of 'hours of football' and 'humanity' to examine whether humanity moderates the relationship between playing football and mental well-being. Significance testing of moderation effects will be performed to visualise the interaction effects, using a 95% confidence interval with a 0.05 cut-off for the p-value. After the moderation analysis of the virtue of humanity, the strengths it comprises (love, kindness, social intelligence) will be checked individually on whether they moderate the relationship by themselves.

Results

Demographics

Of the 60 participants who completed the questionnaire, three had to be excluded. Two participants were under 18 years old, and one participant was 52 years old and therefore not within the target age group of this study. This resulted in a final sample of 57 participants who ranged in age from 18 to 30 years ($M = 22.40$, $SD = 2.66$). 35 (61.40 %) of the participants were male, and 22 (38.60 %) were female. Furthermore, 31 (54.39 %) participants were Dutch, 25 (43.86 %) were German, and 1 (1.75 %) was of other nationality (Ukrainian).

Parametric Assumptions

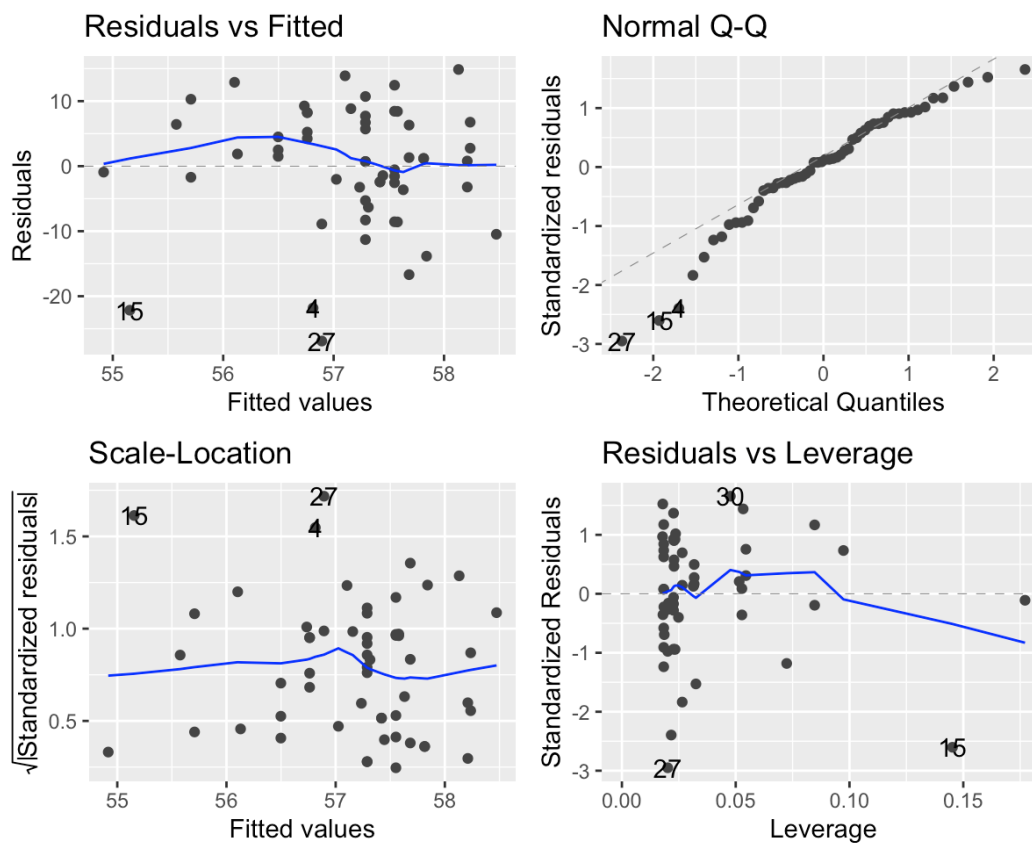
To determine whether the sample meets the assumptions of normality, independence of residuals, linearity and homoscedasticity, several analyses were conducted. A Shapiro-Wilk test was performed to test the variables hours of soccer and mental well-being for normality. During the first test, both variables returned significant (hours of football $W = 0.79$, $p < 0.001$, mental well-being $W = 0.95$, $p = 0.03$). Because of the very high significance of the variable 'hours of football', one outlier (response 36) that severely skewed the data was removed. Figure 2 shows the data distribution after the removal of the outlier. Afterwards, the Shapiro-Wilk test was redone and still returned significant values, (hours of football $W = 0.92$, $p = 0.002$, mental wellbeing $W = 0.94$, $p = 0.01$), indicating that the data were not normally distributed.

To test for heteroscedasticity, residuals versus fitted values plots were created which showed an even distribution of the values, indicating homoscedasticity. A Breusch-Pagan test was performed, and the results confirmed the presence of homoscedasticity ($BP = 4.09$, $df = 3$, $p = 0.25$). Furthermore, a VIF analysis was conducted to test for the assumption of linearity. The values were centred due to being high above the threshold after which they

indicated no multicollinearity (hours of football = 1.02, humanity = 1.03, interaction effect = 1.04). Lastly, a Durbin-Watson test was performed to test for independence of the residuals, D-W statistic = 1.91, $p = 0.73$). Since the assumption of normality was not met, non-parametric testing methods had to be used for further analysis of the data.

Figure 2

Visual Representation of the Four Assumptions after Removal of the Outlier



Descriptive Statistics

The hours spent playing football per week ranged from 1.5 to 25.9 with a mean of 6.82 hours (SD = 3.84), a median of 6, a positive skew (2.40) and high kurtosis (8.74). The mental well-being score of the participants ranged from 30 to 73 with a mean of 57.42 (SD = 9.28), a median of 58, a negative skew (-0.85) and minimal kurtosis (0.71). The GACS-24 scores of humanity ranged from 4.33 to 7.00 with a mean of 5.54 [1-7] (SD = 0.62), a median of 5.67, a minimal positive skew (0.04) and low kurtosis (-0.63). To assess the internal

consistency of the two questionnaires used, Cronbach's alpha was calculated. The alpha value for the humanity questions of the GACS-24 questionnaire was 0.45, and the MHC-SF scale had an alpha coefficient of 0.85.

Hypothesis Testing

Testing the first hypothesis, the correlation between hours of football played per week and mental well-being turned out to be positive and insignificant ($\rho = 0.054$, $p = 0.69$). For the second hypothesis, a generalised linear model analysis with humanity as the moderator concluded no significant moderating effect on the relationship between the weekly hours of football and mental well-being ($\beta = 3.80$, $p = 0.87$). To test the third hypothesis, Bootstrap confidence intervals were conducted for the strengths kindness (95% CI [-1.59, 17.08]), love (95% CI [-0.67, 1.73]), and social intelligence (95% CI [-1.25, 1.75]) which returned non-significant, indicating no moderating effect of the strengths individually.

Discussion

Sports Participation and Mental Well-Being

This research investigated the relationship between weekly amateur football participation and mental well-being, and the moderating role of the character virtue humanity in this relationship. A significant positive correlation between the weekly hours spent playing football and mental well-being was hypothesised. Not fully aligned with expectations, a positive but not significant correlation was found in this study. Plenty of evidence exists on the positive correlation between sports participation and mental health, as discussed in the introduction. However, some factors are present specifically in team sports that might explain the diminished positive impact of sports participation on mental well-being.

Studies have examined the consequences of the competitive nature that is present in football. Negative effects on mental well-being have been found specifically in low-skilled footballers due to a potential decrease in their self-esteem resulting from their inferior achievements compared to higher-skilled team members, thereby leading to stress and performance anxiety (Andersen et al., 2019). Furthermore, research involving a volleyball sports team found that participation in their sport had a more positive effect on the participants' mental health when they scored higher on the trait "competitiveness" than those with a lower score. Competitive players perceived the competitive interactions with their fellow team members as beneficial for their self-esteem and self-image since these interactions align more with their identity role. Therefore, people who are not competition-natured may not experience a significant improvement in their mental well-being from engaging in team sports (Andersen et al., 2019).

Another potential reason for a diminished positive effect of football participation on mental well-being is that athletes are more likely to become ill or injured and are consequently (temporarily) unable to participate in their sport. The higher their expectations

of their own sports performance, the more pressure they put on themselves which can adversely affect their mental health in case of illness or injury (Giles et al., 2020).

While a team sports environment generally impacts mental health positively due to increased social support and connectedness, in some cases, the opposite can be true. Incidences of bullying, discrimination, or conflict have been found to affect athletes' mental well-being negatively (Giles et al., 2020), as well as lower socioeconomic status due to salary differences in team athletes (Zepp et al., 2021). In addition, aggression and violence occur more frequently in team sports than in individual and less competitive team sports, possibly affecting mental well-being adversely (Andersen et al., 2019).

Mental well-being in young adults has been decreasing in general, as discussed in the introduction. Since the participants of this research are part of this population, the positive effect of football participation on their mental health might be diminished, therefore weakening the correlation. Nevertheless, football participation was found to positively correlate with mental well-being in this study. A well-being median above that of the general Dutch population was found – a finding in line with the hypothesis of football participation correlating positively with mental well-being, although not significantly.

The Moderator Humanity

Secondly, it was hypothesised that the character virtue humanity moderates the relationship between football participation and mental well-being. Contrary to expectations, the moderating effect of humanity turned out to be insignificant. However, the footballers in this sample scored higher on the virtue humanity than the average population. Five meta-analyses conducted by Heintz and Ruch (2022) investigated all 24 VIA character strengths in a large population and found an average humanity score of 3.86 for adults aged 21-24 years. Since the current study's result is above average, this might indicate that people who feel drawn towards team sports possess the character virtue humanity. People who score lower on

humanity and, therefore, care less about “tending and befriending” others may tend towards individual sports, such as going to the gym or running. Nevertheless, more participants who score lower on humanity would be needed to more accurately assess the moderating role of humanity.

The Moderators Kindness, Love, and Social Intelligence

Each strength (kindness, social intelligence, love) individually also did not have a moderating effect on this relationship which did not align with prior expectations again. A possible explanation of this result is the concept of overuse, underuse, and optimal use of a character strength (Niemiec, 2019). Overuse of a given strength can have negative effects on mental health, just as underuse. In order to have a positive effect on well-being, a character strength should be used to an appropriate degree, and under the right circumstances (Niemiec, 2019). Excessive use of the strength kindness, for example, may result in feelings of exhaustion and fatigue due to the increased focus on others (Weziak-Bialowolska et al., 2023). It is a character strength characterised by being caring, giving, and going out of one’s way for the benefit of other people. Due to the external focus of this strength, self-compassionate behaviours such as self-care and good sleep may be put into the background, becoming less of a priority and may cause, especially over the long term, more damage than benefit to the person being kind. Research by Weziak-Bialowolska et al. (2023) has shown a significant negative correlation between kindness and mental well-being.

Implications

The findings of this research have meaningful implications. So far, the character virtue humanity has not been researched in football players specifically. This study has shown that footballers tend to score higher on this virtue than the average population – a finding that opens up possibilities in the area of character strength research. For example, a path that emerges from this finding would be to explore if the mental well-being of people who score

high in humanity but do not yet participate in a team sport would improve by starting to do so. Research may also focus on different sports and character strengths. Which activities improve the mental well-being of a person may depend on their unique set of character strengths and differ highly. As a consequence of more insight into this area, psychological interventions focusing on increasing mental well-being could be improved.

Limitations

Despite these contributions, this research has some limitations. This study focused solely on amateur-level football players. Past research has shown that participation in football at an elite level can have negative effects on the player's mental health. Professional footballers have higher incidences of psychological distress (depression and anxiety), disordered eating, and alcohol misuse (Kilic et al., 2021; Perry et al., 2022). Because this research studied footballers who play at amateur-level, findings cannot be generalised to football players of all levels.

Another limitation of this study is the manner in which participants were recruited. The sample was collected by going to football clubs and asking their members for help by completing a questionnaire. Therefore, participation was voluntary and dependent on the willingness of the football players to take the time to answer the questions. One aspect of the virtue humanity is "you do good things for people; you help and care for others". The chosen method of sampling for this study may have caused a bias since only people who were willing to help by filling in the questionnaire participated in the study. This may have filtered out footballers who score lower on humanity, since they tend to care less about helping others, therefore biasing the result towards a higher humanity score in footballers.

Strengths

This study determined the level of mental well-being and the score of the virtue humanity in young football players. Consequently, insight was gained into football players'

character strengths - no prior research focused on this specific virtue. Results showed that footballers score higher on humanity than the average population, and this opens up new directions of research about the role of character strengths and mental well-being.

Furthermore, the MHC-SF has been shown to be a highly reliable instrument for measuring participants' mental well-being (Kennes et al., 2020; Luijten et al., 2019). In this study, the internal consistency of the questionnaire was high as well, confirming the high reliability of the questionnaire's results, thereby providing insight into the mental well-being of young footballers.

Future Research

A suggestion for future research would be to recruit more participants who score lower on this virtue to more accurately assess its moderating effect on the relationship between sports participation and mental well-being. Since the average score of humanity in this sample was high, it limits the study's ability to explain the true moderating effect of humanity.

Furthermore, to assess the effect of team sports participation on mental well-being, it is wise to research a variety of team sports. Not every team sport is equally competitive, and people participate in the same sport at differing levels of competitiveness. Football is one of the most competitive-natured sports, and it may be the case that because of its competitive nature, the positive effect of sports on mental well-being is diminished. Some team sports can be engaged in with a less competitive mindset, seen as participating in the sport "together" instead of "against each other". This way, the benefit of interaction with other people is preserved, but the potential negative effect of competition on mental well-being is removed.

Lastly, potential confounding variables, such as socioeconomic status, injuries, and stress levels were not controlled for within this research. Such factors have been shown to

significantly influence football players' mental well-being, and it is recommended to control for them in future research.

Conclusion

This research explored the moderating role of the character virtue humanity on the relationship between weekly football participation and mental well-being, and of each strength of humanity (kindness, love, and social intelligence) individually in young adults. Results showed a positive but non-significant relationship between weekly football participation and mental well-being. No moderating effect on this relationship of the virtue humanity was found, as well as of each strength individually. However, further research is needed to accurately assess the moderating effect of character strengths when it comes to sports participation and mental well-being.

References

- Andersen, M. H., Ottesen, L., & Thing, L. F. (2019). The social and psychological health outcomes of team sport participation in adults: An integrative review of research. *Scandinavian journal of public health*, 47(8), 832-850.
<https://doi.org/10.1177/14034948187914>
- Beller, J., Regidor, E., Lostao, L., Miething, A., Kröger, C., Safieddine, B., ... & Geyer, S. (2021). Decline of depressive symptoms in Europe: differential trends across the lifespan. *Social psychiatry and psychiatric epidemiology*, 56, 1249-1262.
<https://doi.org/10.1007/s00127-020-01979-6>
- Coghlan, A., & Filo, K. (2016). Bringing personal character strengths into the production of the leisure experience. *Leisure Sciences*, 38(2), 100-117.
<https://doi.org/10.1080/01490400.2015.1087355>
- Donaldson, S. I., Csikszentmihalyi, M., & Nakamura, J. (2011). *Applied positive psychology: Improving everyday life, health, schools, work, and society*. Routledge.
<https://doi.org/10.4324/9780203818909>
- Easterlin, M. C., Chung, P. J., Leng, M., & Dudovitz, R. (2019). Association of team sports participation with long-term mental health outcomes among individuals exposed to adverse childhood experiences. *JAMA pediatrics*, 173(7), 681-688.
<https://doi.org/10.1001/jamapediatrics.2019.1212>
- Eriksson, M., Ghazinour, M., & Hammarström, A. (2018). Different uses of Bronfenbrenner's ecological theory in public mental health research: what is their value for guiding public mental health policy and practice?. *Social Theory & Health*, 16, 414-433.
<https://doi.org/10.1057/s41285-018-0065-6>

- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191. <https://doi.org/10.3758/BF03193146>
- Fusar-Poli, P., Correll, C. U., Arango, C., Berk, M., Patel, V., & Ioannidis, J. P. (2021). Preventive psychiatry: a blueprint for improving the mental health of young people. *World Psychiatry*, 20(2), 200-221. <https://doi.org/10.1002/wps.20869>
- Giles, S., Fletcher, D., Arnold, R., Ashfield, A., & Harrison, J. (2020). Measuring well-being in sport performers: where are we now and how do we progress?. *Sports Medicine*, 50(7), 1255-1270. <https://doi.org/10.1007/s40279-020-01274-z>
- Gurau, T. V., Gurau, G., Voinescu, D. C., Anghel, L., Onose, G., Iordan, D. A., ... & Musat, C. L. (2023). Epidemiology of injuries in men's professional and amateur football (part I). *Journal of clinical medicine*, 12(17), 5569. <https://doi.org/10.3390/jcm12175569>
- Heintz, S., & Ruch, W. (2022). Cross-sectional age differences in 24 character strengths: Five meta-analyses from early adolescence to late adulthood. *The Journal of Positive Psychology*, 17(3), 356-374. <https://doi.org/10.1080/17439760.2021.1871938>
- Horigian, V. E., Schmidt, R. D., & Feaster, D. J. (2021). Loneliness, mental health, and substance use among US young adults during COVID-19. *Journal of psychoactive drugs*, 53(1), 1-9. <https://doi.org/10.1080/02791072.2020.1836435>
- International Society of Sport Psychology (1992). Physical activity and psychological benefits: A position statement from the international society of sport psychology. *Journal of Applied Sport Psychology*, 4, 94-98. <https://doi.org/10.1080/10413209208406452>
- Kennes, A., Peeters, S., Janssens, M., Reijnders, J., Lataster, J., & Jacobs, N. (2020). Psychometric evaluation of the mental health continuum-short form (MHC-SF) for

Dutch adolescents. *Journal of Child and Family Studies*, 29, 3276-3286.

<https://doi.org/10.1007/s10826-020-01803-4>

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in

life. *Journal of health and social behavior*, 207-222. <https://doi.org/10.2307/3090197>

Kilic, Ö., Carmody, S., Upmeijer, J., Kerkhoffs, G. M., Purcell, R., Rice, S., & Gouttebauge,

V. (2021). Prevalence of mental health symptoms among male and female Australian professional footballers. *BMJ Open Sport & Exercise Medicine*, 7(3), e001043.

<https://doi.org/10.1136/bmjsem-2021-001043>

Lamers, S. M., Westerhof, G. J., Bohlmeijer, E. T., ten Klooster, P. M., & Keyes, C. L.

(2010). Evaluating the psychometric properties of the mental health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology*, 67(1), 99-110.

<https://doi.org/10.1002/jclp.20741>

Lee, C. M., Cadigan, J. M., & Rhew, I. C. (2020). Increases in loneliness among young adults during the COVID-19 pandemic and association with increases in mental health problems. *Journal of Adolescent Health*, 67(5), 714-717.

<https://doi.org/10.1016/j.jadohealth.2020.08.009>

Lee, C. Y. S., Goldstein, S. E., & Dik, B. J. (2018). The relational context of social support in young adults: Links with stress and well-being. *Journal of Adult Development*, 25, 25-

36. <https://doi.org/10.1007/s10804-017-9271-z>

Luijten, C. C., Kuppens, S., van de Bongardt, D., & Nieboer, A. P. (2019). Evaluating the psychometric properties of the mental health continuum-short form (MHC-SF) in Dutch adolescents. *Health and quality of life outcomes*, 17, 1-10.

<https://doi.org/10.1186/s12955-019-1221-y>

Martínez-Martí, M. L., & Ruch, W. (2014). Character strengths and well-being across the life span: data from a representative sample of German-speaking adults living in

Switzerland. *Frontiers in psychology*, 5, 105311.

<https://doi.org/10.3389/fpsyg.2014.01253>

Morgan, A. J., Parker, A. G., Alvarez-Jimenez, M., & Jorm, A. F. (2013). Exercise and mental health: an exercise and sports science Australia commissioned review. *Journal of Exercise Physiology Online*, 16(4).

Murray, R. M., Sabiston, C. M., Doré, I., Bélanger, M., & O'Loughlin, J. L. (2021). Association between pattern of team sport participation from adolescence to young adulthood and mental health. *Scandinavian journal of medicine & science in sports*, 31(7), 1481-1488. <https://doi.org/10.1111/sms.13957>

Niemiec, R. M. (2019). Finding the golden mean: the overuse, underuse, and optimal use of character strengths. *Counselling Psychology Quarterly*, 32(3-4), 453-471. <https://doi.org/10.1080/09515070.2019.1617674>

Niemiec, R. M. (2020). Six functions of character strengths for thriving at times of adversity and opportunity: A theoretical perspective. *Applied Research in Quality of Life*, 15(2), 551-572. <https://doi.org/10.1007/s11482-018-9692-2>

Perry, C., Chantry, A. J., & Champ, F. M. (2022). Elite female footballers in England: An exploration of mental ill-health and help-seeking intentions. *Science and medicine in football*, 6(5), 650-659. <https://doi.org/10.1080/24733938.2022.2084149>

Peterson, C. (2006). *A primer in positive psychology*. Oxford university press.

Peterson, C., & Seligman, M. E. (2004). *Character strengths and virtues: A handbook and classification* (Vol. 1). Oxford university press.

Proyer, R. T., Gander, F., Wellenzohn, S., & Ruch, W. (2013). What good are character strengths beyond subjective well-being? The contribution of the good character on self-reported health-oriented behavior, physical fitness, and the subjective health

status. *The Journal of Positive Psychology*, 8(3), 222-232.

<https://doi.org/10.1080/17439760.2013.777767>

Santini, Z. I., Torres-Sahli, M., Hinrichsen, C., Meilstrup, C., Madsen, K. R., Rayce, S. B., ... & Koushede, V. (2020). Measuring positive mental health and flourishing in Denmark: validation of the mental health continuum-short form (MHC-SF) and cross-cultural comparison across three countries. *Health and quality of life outcomes*, 18, 1-15. <https://doi.org/10.1186/s12955-020-01546-2>

Schutte, N. S., & Malouff, J. M. (2019). The impact of signature character strengths interventions: A meta-analysis. *Journal of happiness studies*, 20, 1179-1196. <https://doi.org/10.1007/s10902-018-9990-2>

Shimai, S., & Urata, Y. (2023). Development and validation of the Character Strengths Test 24 (CST24): a brief measure of 24 character strengths. *BMC Psychology*, 11(1). <https://doi.org/10.1186/s40359-023-01280-6>

Weziak-Bialowolska, D., Bialowolski, P., & Niemiec, R. M. (2023). Character strengths and health-related quality of life in a large international sample: A cross-sectional analysis. *Journal of Research in Personality*, 103, 104338. <https://doi.org/10.1016/j.jrp.2022.104338>

World Health Organisation 17 June 2022. Mental health. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

Zepp, C., Belz, J., & Kleinert, J. (2021). Mental well-being and risk of depression in amateur soccer players. *Zeitschrift für Sportpsychologie*. <https://doi.org/10.1026/1612-5010/a000333>

Zuckerman, S. L., Tang, A. R., Richard, K. E., Grisham, C. J., Kuhn, A. W., Bonfield, C. M., & Yengo-Kahn, A. M. (2021). The behavioral, psychological, and social impacts of

team sports: a systematic review and meta-analysis. *The Physician and sportsmedicine*, 49(3), 246-261. <https://doi.org/10.1080/00913847.2020.1850152>

AI Statement

During preparations for this work, the author used AI in the form of *Grammarly* and *ChatGPT* in order to check the text for grammar and spelling mistakes, and to look up errors in the R code for the data analysis. After using these tools, the author reviewed and edited the content as needed and takes full responsibility for the content of the work.