

Evaluating meaning in life and its contributors in athletic and non-athletic college students

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Abstract:

Meaning in life is a theoretically driven variable with ramifications to physical and mental health and well-being in the population. There is unfortunately a lack of investigations present in the literature into the applicability of current theories of meaning in life in specialized groups such as athletes to determine if those models fit the athletic population. One such theory, the Meaning Maintenance Model discusses four informers of an individual's meaning in life: self-esteem, closure, social connectedness, and symbolic immortality. Given the unique opportunities presented to athletes in each of these four indicators through their participation in sport, we hypothesized that these factors will more strongly contribute to meaning in life in athletes than non-athletes and that these variables explain one's sense of meaning in life better in athletes than non-athletes. We collected subjective data pertaining to meaning in life, self-esteem, need for closure, social connectedness, and symbolic immortality from a sample of collegiate athletes and non-athletes. While there was limited evidence for group differences amongst the measured contributors of meaning in life and in subjective levels of meaning in life, itself, we did find evidence suggesting that our models explained more variance for non-athletes than for athletes, counter to expectations. It is suggested that athletes draw more of their sense of meaning from sources not presented in the Meaning Maintenance Model. Such results open the door for novel indicators to be investigated, such as potential for personal development, athletic success, or strength of social identity, and potentially utilized to bolster meaning-in-life in this unique population which can enhance well-being.

Key Words: - Meaning Maintenance Model, Sports, Self Esteem, Closure, Connectedness, Immortality

Introduction

Since the notable emergence of the now-classic “iceberg profile” (Morgan, 1980), it has become clear that the mental characteristics of athletes are different from non-athletes. More recent work continues to suggest that, compared to the general population, athletes have displayed higher levels of sociability (Allen et al., 2021; Aries et al., 2004), lower levels of neuroticism (Lacinova et al., 2023; McKelvie et al., 2003), and in general have more positive personality traits (Laborde et al., 2016) while displaying lower cortisol levels (Verner et al., 2010) and greater stress resilience (Cevada et al., 2020; Hatami, 2023). Of course, not all differences between these groups favor athletes. Notably, collegiate-level athletes report getting less sleep, having more responsibilities, greater time-constraints, and, in some case, being more anxious than non-athletic students (Maurer & Roh, 2015; Toole et al., 2025; Wilson & Pritchard, 2005). Based on reports of such group differences, it is not clear whether patterns in data gathered from a non-athletic population, and the theories which grow out of them, apply similarly to an athletic population compared to a non-athletic population. The breadth or extent of group differences present between athletes and non-athletes in areas of importance must be 1) empirically and methodically evaluated and 2) grounded in established theoretical frameworks.

One theoretically-driven variable of broad significance is meaning in life (MiL), defined as one's sense of active relation or connection between the self and the world which extends beyond the constraints of local time and space (Heine et al., 2006). MiL is related to a range of positive outcomes including physical health (Czekierda et al., 2017), psychological well-being (Weziak-Bialowolska & Bialowolski, 2024; Zika & Chamberlain, 1992), and resilience to stress (Miao & Cao, 2024; Ostafin & Proulx, 2020). Given that many in contemporary society are experiencing what might be called a “meaning crisis” (Henson et al., 2022; Nørgaard et al., 2025; Pipere & Mārtinsons, 2022), corresponding to increasing perceptions of nihilism (Jahangiri & Ghareh, 2015; Marinovic, 2022; Scott & Cohen, 2022; Twenge et al., 2012) and rising rates of mental illness (Richter et al., 2019; Tkacz & Brady, 2021; Witters, 2025), having an understanding of this construct appropriate to an athletic population can lead to means of buffering this population from the negative effects of a lack of perceived MiL.

This is particularly pertinent given the specific risks to well-being inherent to the athletic population. In spite of the general positive effect physical exercise and fitness has on mental health (Mahindru et al., 2023; Rebar et al., 2015; Rodríguez-Romo et al., 2023; Rosenbaum et al., 2014), sporting athletes can still display

significant levels of depression, eating and substance-use disorders, and burnout (Hughes & Leavey, 2012; Pereira Vargas et al., 2024; Reardon & Factor, 2010). Intercollegiate student athletes in particular also have unique stressors compared to the non-athletic collegiate student population which present risks to their well-being (Toole et al., 2025; Wilson & Pritchard, 2005). If it is indeed the case that MiL is a protective factor against such conditions (Baquero-Tomás et al., 2023; Hedayati & Khazaei, 2014; Marco et al., 2021; McNeely et al., 2002), particularly in a group in which mental illness is associated with notable stigma (Åkesdotter et al., 2024; Chow et al., 2021; Hilliard et al., 2022), improving our understanding of the concept, particularly in collegiate-level athletes, will be of benefit.

In their Meaning Maintenance Model (MMM), Heine, Proulx, and Vohs (2006) echoes the sentiment of the distinguished Viktor Frankl (1985), as well as contemporary researchers (Vervaeke et al., 2017), that humans are driven to have a sense of meaning to their existence and negative consequences develop when this need is unmet. According to the MMM, an individual's sense of MiL can be derived from the satisfaction of at least four psychological needs: self-esteem, certainty or closure, affiliation or social-connectedness, and symbolic immortality. Further, the more meaning-informers one has, the more robust one's sense of MiL will be. While the MMM appears to have some explanatory power in the general population (de Zavala, 2021; Heine et al., 2006; Joyce & Lynch, 2015; Zarzeczna & Proulx, 2026), its applicability to the collegiate athletic population has not been adequately explored.

Due to the unique experiences of, and demands placed upon, collegiate athletes, it is possible that the MMM's proposed informers of MiL might especially apply to this population. Of note, athletes have been observed to display greater levels of self-esteem compared to non-athletes (Armstrong & Oomen-Early, 2009; Mathew, 2017; Tilindiené et al., 2014). Evidence further suggests that athletic participation allows for a high degree of interpersonal or social contact and therefore affords increased social connectedness (Armstrong & Oomen-Early, 2009; DeFreese et al., 2021; McNeely et al., 2002).

Athletic participation might also increase one's sense of certainty about one's understanding of the world, and potentially their need for certainty, in that, through their practice, training, and performances, these individuals are able to see that their specific actions can influence the world around them in predictable ways (Holden et al., 2019). Finally, through participation in an athletic organization, one is participating in a system which is larger than, or transcends, the individual.

Thereby, an athlete is potentially contributing to something which will last after the individual's participation in the organization and perhaps after death, thus satisfying the need for symbolic immortality (Pisk, 2012). While these observations have been made, it is unclear to what degree they lead to contributions to MiL within the collegiate athletic population to the same degree as they are proposed to within the collegiate non-athletic population, or indeed whether there are any differences in MiL between these groups at all.

In this study, we evaluated group differences in terms of MiL, via the Meaning in Life Questionnaire (Steger et al., 2006), which assesses both Presence of, and Search for, MiL, and in terms of subjective indicators thereof as specified in the MMM (sp., self-esteem, closure, social connectedness, and symbolic immortality), between athletes and non-athletes in a collegiate student population. We hypothesize that:

H1: Presence of Meaning in Life (PMiL) will be predicted more strongly in athletes than non-athletes by 1a) self-esteem, 1b) need for closure/certainty, 1c) social connectedness, and 1d) symbolic immortality.

H2: Search for Meaning in Life (SMiL) will be predicted more strongly in athletes than non-athletes by 2a) self-esteem, 2b) need for closure/certainty, 2c) social connectedness, and 2d) symbolic immortality.

H3: Statistical models will better fit the PMiL data for athletes than non-athletes.

H4: Statistical models will better fit the SMiL data for athletes than non-athletes.

H5: Athletes will report greater PMiL compared to non-athletes.

H6: Athletes will report lower SMiL compared to non-athletes.

Materials & Methods

Participants

A total of 336 individuals (158 athletes and 178 non-athletes [122 males, 206 females, 8 other]), aged 18-26, taking introductory psychology courses from a small liberal arts college in a rural portion of the American mid-Atlantic region participating in Division III athletics gave their informed consent and participated in this study. To detect moderately sized effects with adequate power in multiple linear regression, Harrell (2015) recommends having 10-20 observations per covariate. We considered two models, one with 9 covariates and one with 17 covariates.

The recommended sample size for the 9-covariate model is 90 - 180 observations. The recommended sample size for the 17-covariate model is 170 - 340 observations. Our sample size of 336 observations is therefore sufficient for the evaluation of both models. The athletes were from a wide array of sports teams spanning individual and team sports (football, basketball, baseball, track and field, rugby, soccer, volleyball, golf, cross country, tennis, lacrosse, field hockey, swimming, cheerleading, softball, and esports). Participants received course-credit for completing the study. This research was conducted under the ethical supervision of the local institutional review board and conform to the directive of the Helsinki Declaration.

Materials

Meaning-in-life was assessed via the Meaning in Life Questionnaire (MLQ) (Steger et al., 2006), which consists of a series of statements pertaining to perceived presence of meaning in life (PMiL) and a search for meaning in life (SMiL). Participants respond using a 7-point scale ranging from “Absolutely untrue” (1) to “Absolutely true” (7). Self-esteem was measured by the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965), consisting of a series of ten statements. Participants respond to these statements using a 4-point scale from “Strongly agree” (1) to “Strongly disagree” (4). RSES scores were reverse-coded allowing higher scores to indicate higher self-esteem to ease interpretation. The short version of the Need For Closure Scale (NFCS) (Roets & Van Hiel, 2011) was used as a brief measure of one’s need for certainty or closure, consisting of 15 statements. Participants respond to these statements using a 6-points scale from “Strongly disagree” (1) to “Strongly agree” (6). Social connectedness was measured through the Social Connectedness Scale – Revised (SCS-R) (Lee et al., 2001), which consists of 20 statements. Participants respond using a 6-point scale ranging from “Strongly disagree” (1) to “Strongly agree” (6). Finally, the Symbolic Immortality Instrument (SII) (Mathews & Kling, 1988) was used to assess symbolic immortality pertaining to various sources. It consists of 30 statements divided across five subscales (religion [SII-R], nature [SII-N], creative [SII-C], biological [SII-B], and experiential [SII-X]). Participants respond via a 5-point scale from “Strongly disagree” (1) to “Strongly agree” (5).

Other information pertaining to type of athletic involvement (i.e., which sports team(s) is the participant on (if any), age, and gender) was also be gathered via self-report. All questionnaires were securely hosted and accessible online through Qualtrics (Provo, UT).

Procedure

Upon navigating to the Qualtrics website hosting the study, participants were presented with a brief description of the study, informed of risks and benefits of participation, and asked to provide their informed consent. Upon providing that consent, participants were first asked if they are currently participating in organized intercollegiate athletics and to specify which specific intercollegiate sports team they are currently participating in. Subsequent to this, participants were asked to complete the questionnaires in the following order: MLQ, RSES, NFCS, SCS-R, SII, and finally demographic information (i.e., age and gender). Upon providing this information, participants were presented with a prompt saying that their responses have been logged and thanking them for their participation.

Statistical analysis

R Statistical Software (v4.5.0; R Core Team, 2025, Vienna, Austria) was used to perform the analysis. All quantitative variables were centered and scaled prior to the analysis to improve interpretability of results and prevent issues related to differences in variable scaling.

We utilized a multiple linear regression model with PMiL as the response and NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X as predictors to examine the relationship between an individual’s perceived sense of meaning in life and their self-esteem, need for certainty/closure, social-connectedness, and symbolic immortality. Additionally, a binary indicator of athlete status was included as a predictor to test if being an athlete has a significant impact on one’s perceived meaning in life. A similar model with SMiL as the response was used to examine the relationship between an individual’s search for meaning in life and the four types of psychological predictor variables and athlete status.

To investigate the effect of athlete status on the individual relationships between PMiL and each of NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X, we constructed a multiple linear regression model containing an additional eight interaction terms. A similar model with SMiL as the response was also constructed. To determine if the addition of the interaction terms led to a reduction in the residual sum of squares and improved model fit, a partial F test was performed.

To test if the overall model with PMiL as the response and NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X as predictors is more appropriate for athletes than non-athletes, we first divided the data into two subsets, athletes and non-athletes, based on the athlete status variable. We then fit a model with the structure described above to each dataset and compared the associated adjusted R^2 values. A similar procedure was followed for SMiL. All statistical assumptions for normality and homoscedasticity were met.

Results

Meaning in Life – Presence (PMiL)

To evaluate Hypothesis 1 (H1) regarding PMiL, we tested two models. Model 1 included each of the eight predictor scores (NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X) and an additional categorical predictor of athlete status. Model 2 included all variables in Model 1 as well as eight terms to test for interactions between the eight predictor scores and athlete status. When comparing the performance of the two models, Model 2 did not fit the data significantly better than Model 1 ($F(8,318) = 1.154, p = 0.327$). See Figure 1. Further, the interaction terms themselves were not significant predictors in the model, counter to H1. Therefore, we proceeded to evaluate relationships in the data using Model 1.

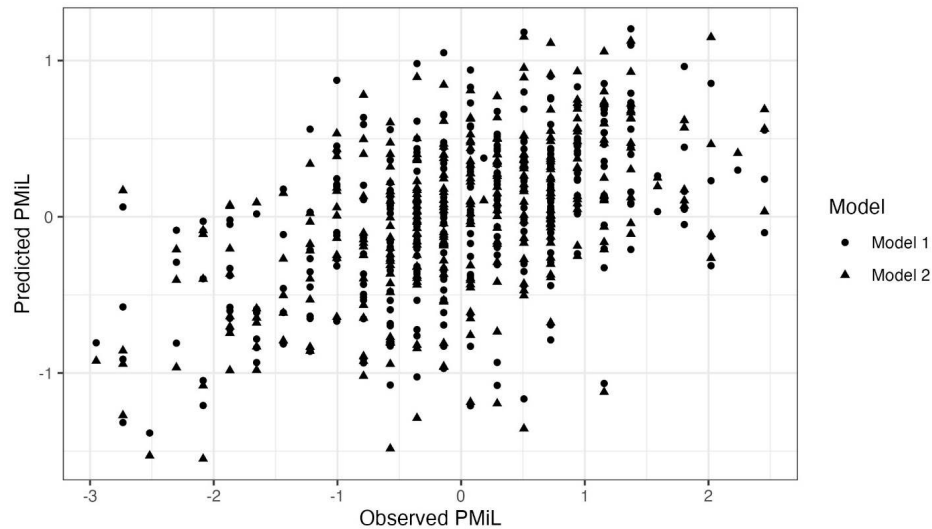


Figure 1. Predicted versus observed responses of models 1 (without interaction terms) and 2 (with interaction terms) for Presence of Meaning in Life (PMiL).

As expected, results revealed that the model fit the data well and was significant ($F(9, 326) = 11.41, p < 0.001, \text{Adj } R^2 = 0.219$). Regarding effects of the individual predictors, social connectedness as measured by the SCS-R positively predicted PMiL ($t(326) = 7.783, p < 0.001, \text{Std}\beta = 0.428$), while need for closure measured by the NFCS negatively predicted PMiL ($t(326) = -1.992, p = 0.047, \text{Std}\beta = -0.100$). Importantly, athlete status did not significantly predict PMiL, indicating that athletes did not rate meaning in life as being any more or less present than non-athletes, counter to H5.

Meaning in Life – Search (SMiL)

To evaluate H2 regarding SMiL, we again tested two models. Model 1 included each of the eight predictor scores (NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X) and an additional categorical predictor of athlete status. Model 2 included all variables in Model 1 as well as eight terms to test for interactions between the eight predictor scores and athlete status. When comparing the performance of the two models, while both models were significant (Model 1: $F(9, 326) = 5.773, p < 0.001, \text{Adj } R^2 = 0.114$; Model 2: $F(17, 318) = 3.388, p < 0.001, \text{Adj } R^2 = 0.108$), Model 2 did not fit the data significantly better than Model 1 ($F(8, 318) = 0.746, p = 0.651$). See Figure 2. That said, one of the interaction terms in Model 2 was significant. Specifically, the athlete status $\times$ SII-N interaction significantly predicted SMiL ($t(318) = -2.161, p = 0.031, \text{Std}\beta = -0.239$); This interaction in Model 2 cooccurred with a main effect for SII-N on SMiL ($t(318) = 2.659, p = 0.008, \text{Std}\beta = 0.210$). The $\text{Std}\beta$ of main effect corresponds to the slope for the non-athlete group while the $\text{Std}\beta$ interaction is added to that of the main effect to yield the slope for the athlete group (sp., $0.210 - 0.239 = -0.029$). Taken together, we see that non-athletes displayed a significant positive relationship between symbolic immortality from nature and SMiL while the athletes did not. In total, H2 was not supported.

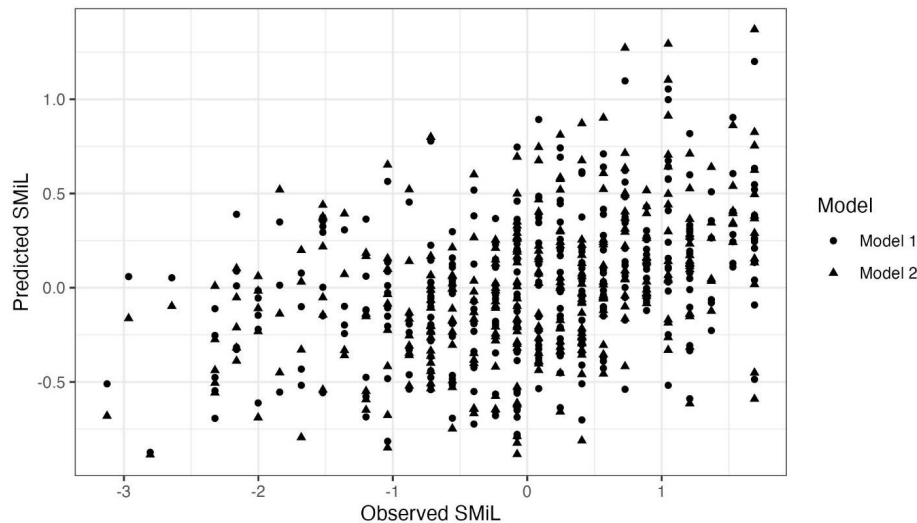


Figure 2. Predicted versus observed responses of models 1 (without interaction terms) and 2 (with interaction terms) for Search for Meaning in Life (SMiL).

In addition to the interaction observed in Model 2, it was also observed in both Model 1 and Model 2 that social connectedness as measured by the SCS-R negatively predicted SMiL (Model 1: $t(326) = -3.385$, $p = 0.001$, $Std\beta = -0.198$; Model 2: $t(318) = -2.541$, $p = 0.012$, $Std\beta = -0.198$). It was further observed that symbolic immortality via religious pursuits as measured by the SII-R negatively predicted SMiL (Model 1: $t(326) = -1.979$, $p = 0.049$, $Std\beta = -0.117$; Model 2: $t(318) = -1.655$, $p = 0.099$, $Std\beta = -0.136$). It was also revealed that symbolic immortality via creative pursuits as measured by the SII-C positively predicted SMiL (Model 1: $t(326) = 2.465$, $p = 0.014$, $Std\beta = 0.151$; Model 2: $t(318) = 2.159$, $p = 0.032$, $Std\beta = 0.178$). It was further observed that need for closure measured by the NFCS positively predicted SMiL (Model 1: $t(326) = 3.219$, $p = 0.001$, $Std\beta = 0.170$; Model 2: $t(318) = 2.834$, $p = 0.005$, $Std\beta = 0.200$). Lastly and importantly, athlete status did not significantly predict SMiL, indicating that athletes did not rate meaning in life as being any more or less actively searched for than non-athletes, counter to H6.

Model Fitment between Athletes and Non-Athletes

To evaluate H3 regarding PMiL, we performed two multiple linear regressions which included each of the eight predictor scores (NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X). The first regression included only the athletes and the second regression included only the non-athletes. The analysis featuring only the athletes was significant ($F(8,149) = 3.800$, $p < 0.001$, $Adj R^2 = 0.125$). The analysis featuring only the non-athletes was also significant ($F(8,169) = 8.537$, $p < 0.001$, $Adj R^2 = 0.254$). See Figure 3. While both analyses yielded significant results, the model appears to fit the non-athlete data better than the athlete data based on the $Adj R^2$ values, counter to H3. See Table 1 for the effects of the individual predictors.

Table 1. Effects of individual predictors on Presence of Meaning in Life between athletes and non-athletes.

Variable	Athletes				Non-athletes			
	Std β	SE	t	p-value	Std β	SE	t	p-value
Intercept	0.283	0.647	0.438	0.662	-0.975	0.699	-1.395	0.165
RSES	0.106	0.279	0.378	0.706	-0.428	0.309	-1.387	0.167
SCS-R	0.314	0.081	3.894	< 0.001***	0.488	0.077	6.353	< 0.001***
SII-R	0.068	0.075	0.905	0.367	0.089	0.081	1.097	0.274
SII-N	-0.048	0.067	-0.714	0.476	0.092	0.078	1.184	0.238
SII-C	0.126	0.085	1.476	0.142	0.014	0.081	0.174	0.862
SII-B	-0.003	0.093	-0.031	0.975	0.014	0.087	0.163	0.871
SII-X	-0.113	0.076	-1.483	0.140	-0.055	0.081	-0.680	0.497
NFCS	-0.181	0.071	-2.549	0.012*	-0.045	0.070	-0.647	0.518

Note. Std β : Standardized Beta. SE: Standard Error. * = $p < 0.05$, ** = $p < 0.01$. *** = $p < 0.001$.

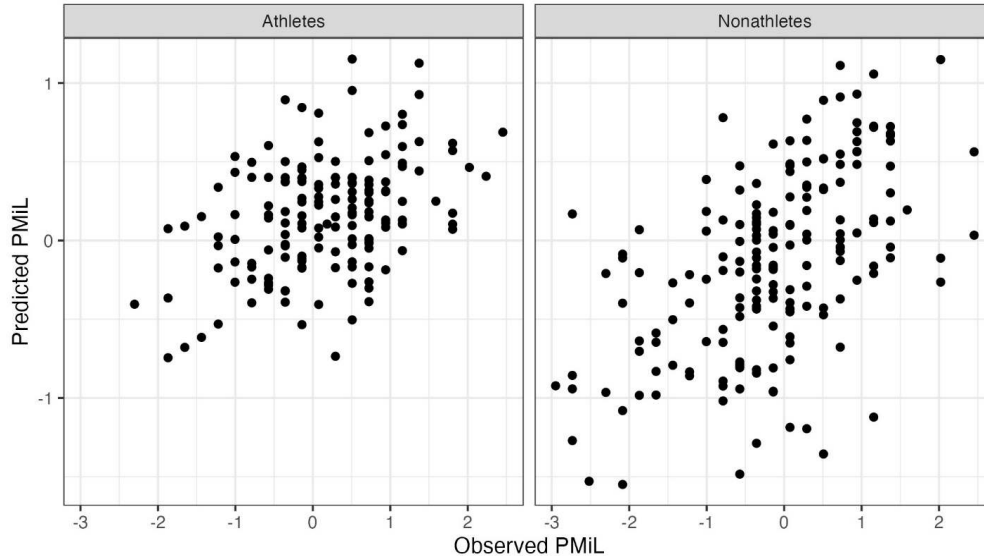


Figure 3. Predicted versus observed responses for Presence of Meaning in Life (PMiL) amongst athletes and non-athletes.

To evaluate H4 regarding SMiL, we again performed two multiple linear regressions which included each of the eight predictor scores (NFCS, SCS-R, RSES, SII-R, SII-N, SII-C, SII-B, and SII-X). As before, the first regression included only the athletes, and the second regression included only the non-athletes. The analysis featuring only the athletes was marginally significant ($F(8,149) = 1.91$, $p = 0.063$, $Adj R^2 = 0.044$). The analysis featuring only the non-athletes, on the other hand, was significant ($F(8,169) = 4.97$, $p < 0.001$, $Adj R^2 = 0.152$). See Figure 4. Based both upon patterns of statistical significance and on the $Adj R^2$ values, the model fits the non-athlete data better than the athlete data, counter to H4. See Table 2 for the effects of the individual predictors.

Table 2. Effects of individual predictors on Search for Meaning in Life between athletes and non-athletes.

Variable	Athletes				Non-athletes			
	Stdβ	SE	t	p-value	Stdβ	SE	t	p-value
Intercept	0.350	0.786	0.445	0.657	0.203	0.670	0.304	0.761
RSES	0.181	0.340	0.532	0.596	0.094	0.300	0.318	0.751
SCS-R	-0.182	0.098	-1.852	0.066†	-0.198	0.074	-2.691	0.008**
SII-R	-0.081	0.092	-0.882	0.379	-0.136	0.078	-1.752	0.082†
SII-N	-0.029	0.082	-0.350	0.727	0.210	0.075	2.815	0.005***
SII-C	0.144	0.104	1.386	0.168	0.178	0.078	2.286	0.023*
SII-B	0.043	0.111	0.377	0.707	0.019	0.084	0.230	0.818
SII-X	0.159	0.093	1.718	0.088†	0.023	0.077	0.304	0.761
NFCS	0.135	0.086	1.569	0.119	0.200	0.067	3.00	0.003**

Note. Stdβ: Standardized Beta. SE: Standard Error. * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$, † = $p < 0.1$.

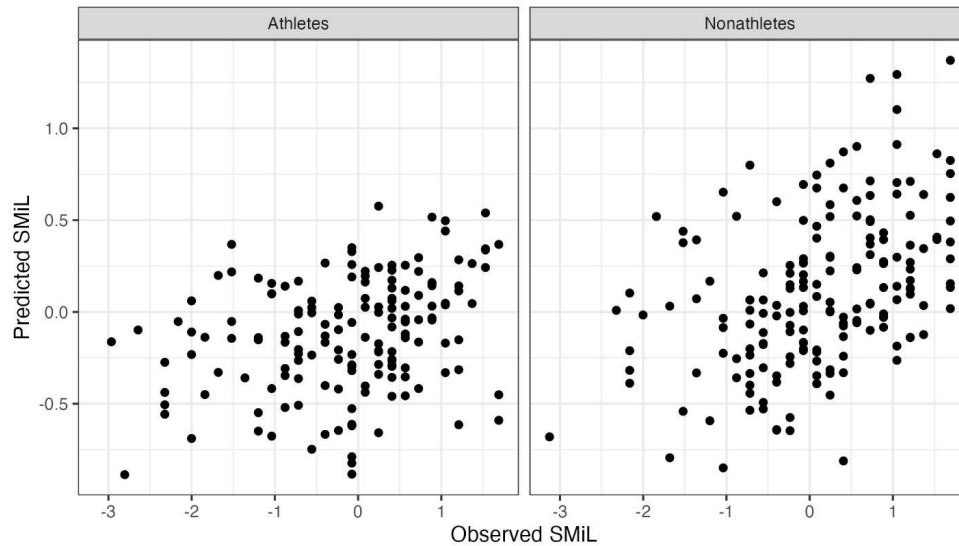


Figure 4. Predicted versus observed responses for Search for Meaning in Life (SMiL) amongst athletes and non-athletes.

Discussion

Our objective for this investigation was to evaluate the presence of group differences in terms of indicators of meaning in life (MiL) as specified in the Meaning Maintenance Model (MMM) (Heine et al., 2006) between athletes and non-athletes in a collegiate student population. According to the MMM, there are at least four contributors to one's sense of MiL: self-esteem, certainty or closure, affiliation or social-connectedness, and symbolic immortality. Given the unique exposures and opportunities available to athletes, along with observed psychological differences between athletic and non-athletic populations (Armstrong & Oomen-Early, 2009; DeFreese et al., 2021; Holden et al., 2019; McNeely et al., 2002; Pisk, 2012), we expected that the MMM's proposed contributors to MiL would predict MiL better for athletes than non-athletes. This general expectation, however, was not supported by the present data. Instead, we observed indications that the overall pattern of informative factors of MiL proposed by the MMM were more suited to non-athletes than athletes.

To explain this overarching result, it is important to re-iterate that the MMM was originally developed with an eye towards the general population rather than a special subset of it (sp., athletes). Given the existence of data illustrating the relative uniqueness of the athletic population from the general population (Aries, McCarthy, Salovey, & Banaji, 2004; Laborde, Guillén, & Mosley, 2016; Mathew, 2017; McKelvie, Lemieux, & Stout, 2003; Morgan, 1980; Verner et al., 2010), it is not surprising to once again find some evidence of that here, even if it is in the opposite direction originally proposed.

To further illuminate the present findings, the present findings occur in a context in which both groups, athletes and non-athletes, displayed similar levels of MiL in terms of both Presence of MiL (PMiL) and Search for MiL (SMiL). This finding is interesting in itself as one may have expected athletes to display greater levels of MiL than their non-athletic counterparts. As a psychological construct, MiL corresponds to one's sense of active relation or connection between the self and the world (Heine et al., 2006). Given their access to means of contributing to the world they live in through their participation in sport, which non-athletes definitionally lack, it is conceivable that athletes have an advantage in terms of building a robust sense of meaning in life. Our data suggest this is not the case, revealing no significant group differences in MiL. Given this, the next question is whether the individual indicators the MiL are also similar between the groups.

This question was addressed in two distinct ways. First, the inclusion of interaction terms in our models did not significantly improve model fit. In other words, the variation in the data was explained to the same

extent irrespective of whether or not we specifically looked at the unique contributions of being an athlete (or not) on the relational strength of each predictor. For instance, we observed evidence suggesting that social connectedness was a strong predictor of the PMiL for athletes as well as non-athletes. We also observed evidence of the similar predictive capacities for both groups from social connection, the creative aspect of the SII, and need for closure regarding SMiL.

Although the overall strength of model fit was not influenced by the interaction terms, we did observe one significant interaction to note. Symbolic immortality derived from nature was more predictive of SMiL for non-athletes than athletes. Specifically, non-athletes who were more actively searching for MiL derived a greater sense of symbolic immortality from being in nature. The particular proclivity of seeing ourselves as parts of nature, to which our material substance will return upon our demise, allows one to place ourselves into a larger structure from which we can derive meaning: the “circle of life” (Teodorescu, 2012). Why non-athletes searching for meaning in life appear more drawn to naturalistic ideas of symbolic immortality compared to non-athletes requires more investigation and suggests that athletes participating in their search for meaning are looking elsewhere, potentially to sources unspecified in the Symbolic Immortality Instrument (SII) used in this study.

The other way of evaluating to what degree the individual indicators are predictive of MiL between the groups corresponds to our third and fourth hypotheses, through which we sought to quantify and compare metrics of model fit between athletes and non-athletes. Doing so revealed an enriched picture of the data, that the indicators of MiL proposed within the MMM explained more of the variance for non-athletes than athletes, as shown by adjusted R^2 values, for both PMiL and SMiL. What this illustrates is that the measured indicators of MiL as expressed in the MMM explain MiL better for non-athletes than athletes. This suggests that athletes, in spite of having similar levels of MiL to non-athletes in our sample, are deriving their sense of MiL from sources not proposed in the MMM to a degree that non-athletes are not. What those sources are can only be speculated on without empirical evidence. However, to engage in that thoughtful speculation, we suggest that further work should examine some of the unique aspects of being an athlete, such as one’s degree of athletic success (Van Yperen et al., 2021), being part of an athletic team (Taştan, 2022), or the strength of one’s identity as an athlete (Lochbaum et al., 2022). Other work by Schmid and colleagues (Schmid et al., 2025) has identified that athletes might also uniquely derive MiL from sense of personal development and growth, albeit their study was focused especially on elite athletes. The level to which these other variables contribute to an athlete’s sense of MiL would not only allow for a more full conceptual understanding of MiL, as such, but it might also provide new potential levers to engage in order to not only improve athlete investment, resilience, and performance “on the field”, but to enhance an athlete’s overall feeling of meaning, purpose, and well-being in life.

Further Limitations

There are a number of other limitations which prevent this investigation from being a definitive work comparing sources of meaning in life between athletic and non-athletic populations. First, the population from which this sample was extracted was from a rather small college in a rural portion of the mid-Atlantic region of the United States. While the college attracts students from a variety of locales, many of the students are from the region. Further, students who are attracted to the rural “small town” atmosphere are not those same people who are attracted to metropolitan “big-city” life (Dodds & Holmes, 2020; Jansen, 2020); this is surely a source of population-level differences which might prevent generalization of these results. Additionally, the athletes in this sample participate in Division III athletics which is not the same level of sheer competitiveness as Division II or Division I inter-collegiate sports (Griffith & Johnson, 2022; Sturm et al., 2011), let alone professional athletes, either within a “westernized” setting or outside of it (Aldridge & Islam, 2012; De Bosscher et al., 2009; Popp et al., 2023). It is therefore recommended that evaluation of indicators of MiL be conducted within different competitive, geographical, and cultural contexts to see to what extent generalizable patterns exist in regards to indicators of meaning in life in athletics and beyond.

Conclusions

This investigation provides evidence that the Meaning Maintenance Model (Heine et al., 2006) has greater applicability to a general collegiate population rather than an athletic collegiate population, further illustrating the uniqueness of the athlete population. This finding extends prior work suggesting that elite athletes derive meaning from unique sources afforded to them by their athletic experience (Schmid et al., 2025). From a theoretical perspective, this growing body of work is suggestive of the need for development of a population-specific model of MiL predictive of the construct within an athletic context.

The alignment of results between collegiate and elite athletes also encourages further empirical elaboration in this field. It is of note that the present collegiate athletic sample was pulled from a Division III institution, a level of relatively lower sporting performance than a Division I collegiate institution, not to mention elite professional sports. Further work can explore at what level of competition these group differences between athletes and non-athletes emerge withing the psychological, specifically the MiL, space.

Further, given MiL’s relation to indicators of well-being (Czekierda et al., 2017; Miao & Cao, 2024; Weziak-Białowolska & Białowski, 2024; Zika & Chamberlain, 1992), the present results encourage further investigation into informers of MiL particular to the athletic population which experiences unique challenges and

opportunities with short- and long-term consequences to health and performance (Houston et al., 2017; Simon & Docherty, 2014). Doing so not only can benefit the athletes themselves, but the credibility, stability, and health of relevant sporting institutions and businesses (Oja et al., 2019). We suggest researchers investigate the potential relationship between MiL and athlete-specific variables, such as sport competency, team cohesion, and athletic identity.

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