



Pursuing Health and Social Affiliation: Intrinsic Motivations of Well-being Through Physical Activity

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Abstract.Background: Abundant research has shown a robust connection between physical activity and mental health. Yet, the nuanced role of motivation remains underexplored. Drawing on self-determination theory, this study delves into the motivational aspects, categorizing them into intrinsic and extrinsic motivations. This study aims to holistically explore the interplay between motivation types and well-being, incorporating hedonic and eudaimonic dimensions, contributing valuable insights for tailored interventions promoting holistic health.

Methods: A cross-sectional survey, employing quantitative methods, was conducted with the participation of 309 Chinese adults recruited through referral sampling methods. Participants, aged from 18 to 60, completed an online survey assessing motivation for physical activity, along with hedonic well-being (affective and cognitive components), and eudaimonic well-being. Valid responses (n=245) underwent analysis using statistical tools, including correlation analyses and linear regression tests, conducted with SPSS software.

Results: The results demonstrated that intrinsic motivations had stronger positive associations with cognitive well-being, positive affect, and eudaimonic well-being compared to external motivations. Two intrinsic motivations, health management, and social affiliation emerged as significant predictors, showing strong positive relationships with eudaimonic well-being, cognitive well-being, and positive affect.

Conclusions: This study reveals the intricate interplay between motivations for physical activity and well-being. Intrinsic motivations exhibit robust correlations with both hedonic and eudaimonic well-being, while external motivations show a limited impact on hedonic well-being. The findings advocate for prioritizing intrinsic motivations in physical activity programs for enhanced well-being. Future research should delve into cross-cultural validation and exploration of causal links in diverse populations.

Keywords: self-determination theory, physical activity, hedonic well-being, intrinsic motivation, external motivation, eudaimonic well-being.

1 Introduction

It has been widely studied that participating in physical activity is beneficial. A comprehensive review of peer-reviewed studies from 1990 to 2022 found that 89% of these studies identified a positive, statistically significant relationship between exercise/physical activity and mental health (Marconcin et al., 2022). Specifically, engaging in moderate to vigorous exercise for three to five sessions per week, each lasting 30–45 minutes, seems to offer optimal mental health benefits. In addition to the prevention of mental and physical illnesses, physical activity is closely linked to psychological well-being. This positive association extends across all age groups, from youth through to seniors (Brown et al. 2014; Biddle et al., 2019; Huang & Humphreys, 2012; Humphreys et al., 2013; Lee, 2023; Lera-López et al. 2016; Marques et al., 2016; Murphy et al., 2020; Rodríguez-Bravo et al., 2020). However, despite the known benefits of physical activity, the area that understanding the specific role of motivation in promoting physical activity and its subsequent influence on well-being has remained underexplored.

2 Literature Review

2.1 Motivation

Motivation is considered a need, purpose, or fulfillment that drives animals to engage in an activity (Chen & Pang, 2012; Crandall, 1980). Ryan and Deci (1985) proposed the self-determination theory to explain motivation. It focused on the autonomously controlled factors for individuals participating in activities, and in turn, predicted

consequences. The key concept of self-determination theory involves basic psychological needs, which posits that competence (interacting effectively with the environment), autonomy (being able to act with own will), and relatedness (having close, affectionate connection with others) are intrinsic, universal, and fundamental needs that underlie the health and well-being of people (Deci & Ryan, 2000). These fundamental needs are conceptualized as innate tendencies for personal development, acting as primary drivers of intrinsic motivation. Intrinsic motivation refers to engaging in an activity for inherent satisfaction and pleasure, while extrinsic motivation involves participation due to external pressures or rewards. According to the self-determination theory, people can chase multiple goals at the same time and the motivation is not simply dichotomous – intrinsic vs extrinsic – but rather but rather exists on a continuous spectrum from intrinsic to extrinsic (Deci & Ryan, 2015). The theory asserts that the type and quality of motivation are crucial in determining the outcomes of an activity, including its impact on functionality and well-being.

Research has demonstrated that intrinsic motivation, which aligns with personal growth, enjoyment, and a sense of overcoming challenges, is positively associated with higher levels of psychological well-being (Ryan & Deci, 2000). In the context of physical activity, intrinsically motivated individuals often engage in exercise because they find it enjoyable or they value the sense of accomplishment it brings. This form of motivation aligns with the basic psychological needs for autonomy, competence, and relatedness, as outlined in the self-determination theory, leading to enhanced well-being.

On the other hand, extrinsic motivation, particularly when it becomes a controlling form of regulation, may not yield the same positive influence on well-being. For instance, exercising primarily for external validation, such as improving self-image for social recognition, may not fulfill innate psychological needs as effectively as intrinsic goals. This discrepancy can lead to lower levels of satisfaction and potentially diminish the positive impacts of physical activity on well-being.

The Goal Content for Exercise Questionnaire (GCEQ), developed by Sebire, Standage, and Vansteenkiste (2008), provides a practical tool for assessing intrinsic and extrinsic goals in exercise contexts. Their research underscores the importance of goal content in exercise, demonstrating that intrinsic goals are more closely associated with higher well-being. This finding is pivotal in understanding the mediating role of motivation in the relationship between physical activity and well-being.

Therefore, as conceptualized by the self-determination theory, the role of motivation in physical activities is a critical factor that influences individual well-being. Distinguishing between intrinsic and extrinsic motivations is essential for designing programs that not only encourage physical activity but also enhance individuals' psychological well-being. This paper aims to delve deeper into this theoretical framework, exploring how different types of motivation in physical activities impact well-being.

2.2 Well-being

Researchers have extensive discussions on well-being, yet different definitions and scopes for what constitutes well-being are studied. There are two types when it comes to personal well-being: hedonic well-being – which emphasizes seeking pleasure, enjoyment, and satisfaction in life – and eudaimonic well-being – which emphasizes seeking purpose, self-growth, and self-actualization (Ryan & Deci, 2001).

A popular concept used in psychological research is subjective well-being (SWB), which refers to people's cognitive (satisfaction with overall and specific life domains) and affective (frequency and intensity experiencing positive and negative affect) evaluations of their lives (Luhmann, 2017). Ryff (2022) reviewed and critiqued positive psychology in that it had issues of unclear terminology definition and delineation. Although SWB is not the same as hedonic well-being, it has been widely considered as hedonic well-being (Keyes et al., 2002; Klusman et al., 2021).

As for eudaimonic well-being, it is highly related and overlaps with hedonic well-being, yet they have important divergence (Deci & Ryan, 2006). Studying the two distinct yet overlapping concepts is crucial for understanding the full spectrum of human well-being. Studies have established a positive relationship between physical activity and hedonic well-being, such as mood enhancement and stress reduction (Stewart-Knox et al., 2012). However, the association of motivations of physical activities and eudaimonic well-being, though equally important, has received comparatively less attention in empirical research. This oversight presents a significant gap in our understanding of how our motivations to participate in physical activities contribute to the broader and deeper aspects of well-being. For this reason, this study aims to explore the relationship between motivations for physical activity and well-being from a holistic view.

3 Current Study

The purpose of the present study is to explore the relationship between the motivation to participate in physical activity and well-being. The present study aims to expand the limited knowledge of the relationship between physical activity and well-being by taking a holistic approach by measuring both hedonic well-being and eudaimonic well-being. On top of it, the study aims to examine the effect of internal motivations and external motivations. It is significant to understand the driving force behind physical activity as it can inform the public in recommendations, guidance, and design of physical activity-based interventions to better improve overall health and well-being.

Based on these considerations, three hypotheses are developed and will be tested in the present studies. In the view of the state of research. It is hypothesized that the motivation to participate in physical activity has a positive association with well-being. Specifically, people who participate in physical activity predominantly with intrinsic motivations have higher eudaimonic well-being levels compared to those who participate in physical activity predominantly with external motivations.

4 Method

4.1 Sample and Procedures

This is a quantitative study based on a cross-sectional survey. A total of 309 Chinese adults were recruited through the referral sampling methods for the study. Respondents were asked to fill out an online survey and spread it to others they know. After filtering out responses that were a) incomplete, b) not meeting age requirements (older than 60 years old), c) consistently identical across survey questions, d) completed in an implausibly brief time (less than two minutes), and e) reporting unrealistic durations for physical activities, a total of 245 responses were valid. Among these, 116 (47.3%) were from male respondents. Nearly half of the sample, 118 people have bachelor's degrees. The mean age was 39.6 (SD=13.5).

4.2 Measures

Motivation. The study employed the Goal Content for Exercise Questionnaire (GCEQ) to assess motivational factors influencing engagement in physical activity.

The GCEQ consisted of 20 items, rated on a 7-point Likert scale (1 = Not at all important to 7 = Extremely important). Participants were instructed to evaluate the importance of each item concerning their involvement in physical activity. The questionnaire categorized items into five groups: health management, skill development, and social affiliation, denoting internal motivations, and social recognition and image, representing external motivations. Average scores were computed for each motivation, with higher scores reflecting greater importance during physical activity, on a scale ranging from 1 to 7. Each GCEQ subscale demonstrated a Cronbach's α of at least .79. For this study, the original English version of the GCEQ underwent translation into Chinese, incorporating culturally appropriate adaptations to ensure clarity and relevance.

Hedonic Well-being. Both the affective component and cognitive component are measured in this study. We measure the affective component of hedonic well-being using the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). It consists of two sub-scales: positive affect and negative affect. Each sub-scale has 10 feelings and emotions. Participants are asked to indicate in general how they feel the particular feeling or emotion on average. Responses to each feeling or emotion are made on a 5-point Likert scale from 1 (very slightly or not at all) to 5 (extremely). The range for each scale is from 10 to 50. The positive effect scale has a Cronbach's α of .76 and test-retest reliability of .68; the negative effect scale has a Cronbach's α of .84 and test-retest reliability of .71.

We measure the cognitive component of hedonic well-being using the Satisfaction With Life Scale (SWLS; Diener et al., 1985). It is a 5-item scale, and each item is made on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) measures the overall satisfaction with life. The total score is on a continuous scale, with the range from 5 (Extremely dissatisfied) to 35 (Extremely satisfied). The Cronbach's α is .87 and the test-retest reliability was .82.

Eudaimonic Well-being. The Questionnaire for Eudaimonic Well-Being (QEWB; Waterman et al., 2010) served as the instrument for gauging levels of eudaimonic well-being in this study. Respondents provided ratings on a 5-point Likert scale, ranging from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). Comprising 21 items, the QEWB featured 14 positively phrased items and 7 negatively phrased items, the latter

of which were reverse-coded. A composite score, derived from averaging responses to all 21 items, ranged from 0 to 4, with higher scores indicating elevated levels of eudaimonic well-being. The questionnaire demonstrated a high internal consistency with a Cronbach's α of .85. For the present study, the original QEWB English version underwent translation into Chinese, accompanied by culturally appropriate modifications to ensure clarity and relevance.

4.3 Data Analysis

The Statistical Package for the Social Sciences (SPSS), a software package used for the analysis of statistical data, was employed to test hypotheses in the study. Before hypothesis testing, descriptive statistics were computed for each variable. Subsequently, all variables underwent assessment for normal distribution. Then correlation analyses were performed to explore relationships among motivation, hedonic well-being (affective and cognitive well-being), and eudaimonic well-being. After the correlation analyses, linear regression tests were employed for variables to further investigate the nature of these relationships.

5 Results

Both internal and external motivations were correlated with well-being outcomes, with internal motivations showing higher associations with all dimensions of well-being than external motivations. Internal motivations demonstrated positive associations with cognitive well-being ($r=.32$), positive affect ($r=.27$), and eudaimonic well-being ($r=.29$). So internal motivations were correlated with both hedonic and eudaimonic well-being. On the other hand, external motivations only had weak associations with hedonic well-being, cognitive well-being ($r=.21$), and positive affect ($r=.15$). Both motivations did not show significant associations with negative affect.

In Table 1, social affiliation showed moderate positive correlations with eudaimonic well-being ($r=.26$) and cognitive well-being ($r=.19$), indicating its relevance to cognitive components of hedonic well-being. Health management was significantly correlated with all well-being measures, displaying the strongest association with eudaimonic well-being ($r=.54$), cognitive well-being ($r=.31$), positive affect ($r=.32$), and a small negative correlation with negative affect ($r=-.14$). Skill development and image showed weaker yet significant correlations with some aspects

of well-being. For instance, skill development was correlated with eudaimonic well-being ($r=.15$) and cognitive well-being ($r=.22$). Image showed small positive correlations with both eudaimonic well-being ($r=.15$) and cognitive well-being ($r=.17$). Social recognition displayed a moderate correlation with cognitive well-being ($r=.21$). For emotional well-being, all other motivations displayed small correlation with positive affect except social recognition; health management was the only variable that predicted negative affection level. Therefore, the hypothesis is generally supported.

Table 1. Results of bivariate correlations analysis

				Eudaimonic Well-being	Hedonic Well-being		
		M	S	QEWB	Cognitive	Affective	
			D		SWL S	Positive Affect	Negative Affect
Internal Motivations	Social Affiliation	3.35	1.67	.88	.26**	.19*	.74
	Health Management	5.65	1.18	.54**	.31**	.32*	-.14*
	Skill Development	4.08	1.76	.15*	.22**	.16*	.25
External Motivations	Social Recognition	3.40	1.66	-.001	.21**	.11	.04
	Image	4.45	1.43	.15*	.17**	.17*	.74

Note: ** $p<.01$, * $p<.05$

Regression tests were conducted to examine the relationship between motivations and well-being. In predicting eudaimonic well-being, a regression model that contained all five motivations Table 2 accounted for 31% of the variance in

eudaimonic well-being ($R^2=.31$, $F(5,239)=21.51$, $p<.001$, $p<.001$). The model revealed that health management was a significant positive predictor ($b=.21$, $p<.001$), while skill development and social recognition were not significant. Social affiliation was another positive predictor ($b=.05$, $p<.05$) for eudaimonic well-being. For cognitive well-being, the same model explained 14.6% of the variance ($R^2=.146$, $F(5,239)=8.18$, $p<.001$). Here, health management again emerged as a significant predictor ($b=.31$, $p<.001$). Similar to eudaimonic well-being, social affiliation was the other variable that yielded positive predictability ($b=.15$, $p<.05$). Therefore, beyond relevance, there is a linear relationship between the two motivations of health management and social affiliation and affective well-being and cognitive well-being.

The findings indicated that there was a stronger relationship between intrinsic motivations with eudaimonic well-being. Intrinsic motivations like health management and social affiliation played significant roles. Health management was a robust predictor for eudaimonic well-being ($b=.21$, $p<.001$, $R^2=.31$), indicating its strong relationship with eudaimonic well-being. Social affiliation also showed a positive correlation with eudaimonic well-being ($r=.26$, $p<.01$), further reinforcing the idea that intrinsic motivations are more strongly related to eudaimonic well-being. On the other hand, neither the extrinsic motivations (social recognition, image) showed statistical significance when predicting eudaimonic well-being.

Combining the information from Table 2 and Table 3, social affiliation and health management showed a significant linear relationship with most well-being variables. Social affiliation was found to have a meaningful impact on various aspects of well-being. It showed a positive linear relationship with eudaimonic well-being, as indicated by a beta coefficient of .048 and statistical significance ($t=2.08$, $p=.04$). Additionally, it exerted influence on cognitive well-being, revealing a significant positive impact ($b=.15$, $t=2.2$, $p=.03$). The pattern continued with positive affect, where social affiliation again displayed a notable positive linear relationship ($b=.09$, $t=2.46$, $p=.02$). However, it is important to note that for negative affect, social affiliation did not demonstrate a significant linear relationship.

Table 2. Summary of regression model

Variable	R ²	Adjusted R ²	F	df1	df2
QEWB	0.31	0.30	21.51***	5	239
SWLS	0.15	0.13	8.18***	5	239

Positive Affect	0.13	0.11	7.22***	5	239
Negative Affect	0.05	0.03	2.24***	5	239

Note: *** $p < .001$

Table 3. Regression analysis of motivation on different well-being

Variable	Eudaimonic Well-being		Hedonic Well-being					
	QEWB		Cognitive		Affective			
			SWLS		Positive Affect		Negative Affect	
	b	t	b	t	b	t	b	t
Social Affiliation	.05	2.08*	.15	2.24*	.09	2.46*	.03	.93
Skill Development	-.02	-1.09	.03	.58	.02	.81	.01	.36
Health Management	.21	9.2*	.31	4.54*	.16	4.58*	.11	2.92*
Social Recognition	-.05	-1.87	.05	.6	.03	.90	.04	1.14
Image	-.004	-.16	.06	.88	.01	.16	.07	1.96

Note: * $p < .05$

Health management, on the other hand, emerged as a particularly strong and consistent predictor across all well-being measures. Its positive linear relationship with eudaimonic well-being was robust ($b=.21$, $t=9.2$, $p<.001$), underlining its significant influence in this area. Similarly, for cognitive well-being, health management was a significant positive predictor ($b=.31$, $t=4.54$, $p<.001$). This motivation also positively influenced positive affect ($b=.16$, $t=4.59$, $p<.001$). Interestingly, it also had a significant negative linear relationship with negative affect ($b=-.11$, $t=-2.92$, $p<.01$), indicating its role not only in enhancing positive aspects of well-being but also in reducing negative emotional states.

6 Discussion

This study aimed to investigate the intricate relationships between distinct motivations for engaging in physical activity and various dimensions of well-being. Specifically, motivations were categorized into internal motivations (social affiliation, health management, skill development) and external motivations (social recognition, image). Participants were recruited online and completed a series of questionnaires measuring their motivations and relevant well-being outcomes. The findings reveal that intrinsic motivations exhibit stronger positive associations with both hedonic and eudaimonic well-being compared to extrinsic motivations. Two intrinsic motivations – health management and social affiliation – were the strongest indicators among others. This nuanced understanding underscores the complexity of the relationship between the reasons individuals pursue physical activity and the resultant impact on their overall well-being.

6.1 Interpretation of Findings

The findings support the hypothesis. First, data exhibit that both intrinsic and extrinsic motivations were correlated with well-being: extrinsic motivation demonstrates a weak positive correlation with hedonic well-being, while intrinsic motivation displays positive correlations with both hedonic and eudaimonic well-being. A detailed analysis of the five motivations considered indicates that they have various degrees of correlation with well-being outcomes. Remarkably, the intrinsic motivations of health management and social affiliation emerge as consistent and predictive variables for both hedonic and eudaimonic well-being. These motivations exhibit significant linear relationships with well-being measures. This robust association between internal motivations, particularly social affiliation and health management, with both hedonic and eudaimonic well-being underscores the profound impact of internal motivations on individuals' overall well-being.

Intrinsic motivations align theoretically with people's psychological needs, emphasizing the importance of fulfilling basic needs for well-being pursuit (Schmuck et al., 2000). According to the self-determination theory, health serves as a fundamental requirement impacting people's competence to perform tasks. Thus, health management, as a crucial intrinsic motivation, robustly predicts well-being across measures. Social affiliation, another significant motivation, involves forming

bonds with others and corresponds to relatedness in the self-determination theory, fulfilling the basic psychological need for meaningful connections, resulting in higher levels of well-being (Deci & Ryan, 2000; Leroy et al., 2010). Notably, skill development does not merge as an intrinsic motivation predictor for well-being. This result could be attributed to participants predominantly engaging in routine practices rather than actively seeking and developing new skills. The limitations of the sample or potential issues with the questionnaire validation after translation into Chinese may also contribute to this outcome. Therefore, further study is required to examine the motivations related to skill development.

On the other side, a diminished correlation is noted between external motivations and hedonic aspects of well-being, such as cognitive well-being and positive affect, underscoring the restricted impact of external rewards on an individual's sense of well-being. One possible explanation is that externally oriented individuals tend to emphasize goals like superficial relationships and social comparisons, which ultimately undermine their overall subjective well-being over time (Kasser, 2003). Alternatively, individuals with high levels of insecurity, low self-esteem, or high narcissism may pursue extrinsic goals, leading to lower well-being (Kasser, 2003).

Interestingly, neither internal nor external motivations exhibited significant correlations with negative affect, implying that the drive to participate in physical activity may not directly shape individuals' experience of negative emotions. This phenomenon could be attributed to the complex interplay of various factors influencing emotional states, suggesting the need for further exploration into the nuanced relationship between motivations and negative affect.

6.2 Practical Significance and Implications

Previous studies have broadly identified a positive impact of physical activities on well-being, yet there is a lack of detailed investigation into the motivations behind physical activity participation and the distinct dimensions of well-being. These findings enrich the ongoing discourse in psychological literature concerning the intrinsic-extrinsic motivation dichotomy and its impact on well-being. By demonstrating the strong correlation between internal motivations and both hedonic and eudaimonic well-being, this study supports theories that posit intrinsic motivation as a key driver of pursuing personal fulfillment and well-being.

This insight can be applied to the design of physical activity programs and guidelines for sports participation. Encouraging participation in physical activity for intrinsic reasons, such as the enjoyment of the activity itself or the social connections it fosters, could enhance the effectiveness of these programs in improving participants' well-being. For the general public, it is imperative to focus on intrinsic motivations, such as pursuing health, joyful interaction, and deep relationships with others. The focus should be placed on the process and a superior exercise experience rather than on extrinsic goals, such as comparisons with others, seeking external recognition, or concerns about own appearance. As the finding suggests when people participate in physical activity as a means to gain external rewards, they do not feel as satisfied about themselves as they focus on the enjoyment of physical activities.

Simultaneously, this poses a challenge to the current trend of pursuing an ideal physique and appearance. Achieving a desirable body shape inherently demands long-term engagement in targeted physical activity and dietary management, making it a challenging feat. Furthermore, this external-focused pursuit of physical appearance may not necessarily garner societal recognition or contribute to well-being.

6.3 Limitation and Future Research

While this study offers valuable insights into the correlation between motivation types and well-being, it is crucial to acknowledge its inherent limitations. Notably, the study's sample population consisted exclusively of Han Chinese individuals, warranting caution in drawing broad conclusions. Generalizability is a concern, urging further investigations across diverse races, nationalities, cultural backgrounds, and social classes to validate the findings.

Another limitation arises from the translation process of the questionnaire from English to Chinese. The absence of a formal validation procedure for reliability introduces the potential for biases in participants' comprehension of specific items, influencing survey scores and, consequently, impacting results. Furthermore, the study heavily relies on general surveys and correlational analyses, providing insights into associations but not establishing causal relationships between motivation variables and well-being.

To enhance our understanding of the causal links between motivation, physical activity, and well-being, future research could incorporate longitudinal designs. Exploring these relationships in diverse populations and settings would further enrich

the literature. Additionally, addressing the translation limitation in future studies through rigorous validation procedures will improve the accuracy and cross-cultural applicability of the research.

Future studies should also delve into engaging individuals' intrinsic motivations and examining relationships between motivation and other well-being influencers such as optimism, self-esteem, and self-awareness. This approach ensures a coherent and logical progression in researching the determinants of well-being.

7 Conclusion

In conclusion, this study provides valuable insights into the complex interplay between distinct motivations for engaging in physical activity and their impact on various dimensions of well-being. The results support the hypothesis that internal motivations, particularly those related to health management and social affiliation, are more strongly correlated with both hedonic and eudaimonic well-being than external motivations. The study underscores the significance of intrinsic motivations in driving personal fulfillment and well-being, aligning with theories such as the self-determination theory.

These insights have practical implications for designing physical activity programs and guidelines. Encouraging intrinsic motivations, such as the enjoyment of the activity and meaningful social connections, may prove more effective in enhancing participants' well-being than focusing on external goals. Future research should explore cultural variations, employ rigorous validation procedures, and adopt longitudinal designs to further elucidate the nuanced relationship between motivations and well-being.

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