

The effect of online social support from sport-related short video platforms on leisure-time physical activity intention

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Within the theory of planned behavior, online social support from contacts on social networking sites has shown significant effects on physical activity behaviors. However, the influence of sport-related short video platforms on physical activity participation has not been widely examined. Therefore, this study explores the impact of online social support from sport-related short video platforms on university students' leisure-time physical activity (LTPA) intention. This study collected 475 responses through China's most popular social media platforms. University students completed a questionnaire assessing perceived online social support, affective and instrumental attitudes, subjective norms, perceived behavioral control, and LTPA intention. Results showed that online social support from sport-related short video platforms directly and indirectly predicted university students' LTPA intention through the mediation effects of affective attitude and subjective norm. Utilizing sport-related short video platforms to provide online social support can be a promising strategy for promoting individuals' intention to engage in LTPA in future interventions.

KEY WORDS: Short video platform, online social support, leisure-time physical activity, theory of planned behavior, LTPA intention

Introduction

Leisure-time physical activity (LTPA) refers to physical activities that individuals participate in during their free time (Fong & Dai, 2021). Participating in regular LTPA is crucial for promoting both physical and mental health; a lack of it may adversely affect one's physical health as well as lead to negative emotions and psychological issues, such as anxiety and depression (Han

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et al., 2017; Janssen & LeBlanc, 2010; Silva et al., 2020). In particular, almost half of the university students in developed countries do not reach the World Health Organization's (WHO) recommended level of LTPA (Dipietro et al., 2020). This situation is even more concerning in China, where over 80% of university students fail to meet the WHO standard, highlighting the importance of addressing LTPA levels among university students to improve their well-being (Xiang et al., 2020). Various barriers to engaging in LTPA include health issues, lack of time and knowledge, accessibility, weather conditions, motivation, psychological disorders, and economic constraints (Borodulin et al., 2016; Rosly et al., 2018; Williams et al., 2014). This study focuses on a social factor (i.e., social support) which is essential for achieving adequate levels of LTPA (Ginis et al., 2016).

Insufficient perceived social support is recognized as a significant obstacle to engaging in LTPA (Gómez-López et al., 2011; Mendonça et al., 2014). According to Cobb (1976), social support refers to the care and support individuals feel from others, such as love, trust, empathy, care, advice, affirmation, and constructive feedback. Previous studies have shown the positive effects of social support on university students' LTPA intention, behavior, and autonomy motivation (e.g., Chatzisarantis et al., 2007; Li et al., 2023), and several interventions that employed social support to foster LTPA behaviors among university students have yielded promising results (e.g., Boyle et al., 2011; Ince, 2008). In addition, past research has incorporated social support as a social influence factor into the theory of planned Behavior (TPB), explaining and predicting health-related behaviors (Cho et al., 2023; Courneya et al., 2000; Rhodes et al., 2002; Zhang et al., 2015). This integration enhances the TPB to better understand university students' intention regarding LTPA participation.

With the continuous advancement of mobile devices and rapid development of social networking sites (SNSs), social media has become an indispensable tool for transforming individuals' lifestyles. The diverse applications and services derived from social media have revolutionized the dynamics of social relationships, information dissemination, and support systems (Chukwuere & Chukwuere, 2017). As individuals enter the "Network Information Age," online social support has become an essential complement to traditional support systems in real-life settings (Turner et al., 2010). Past research has indicated that social media can increase individuals' perception of online social support (Charoensukmongkol, 2014; Rozzell et al., 2014; Wang et al., 2019). Additionally, Zhang et al. (2015) found a link between online social support obtained from SNS chats and university students' intention to participate in LTPA, applying the TPB.

However, although previous research has mainly focused on the relationship between social media and social support concerning established SNSs, such as Facebook and WeChat (Gilmour et al., 2020; Wang et al., 2019), interest in exploring the connection between short videos and online social support is emerging (Yang et al., 2022). In other words, emphasis on understanding how short video platforms contribute to online social support has been growing in recent years.

Short video platforms mainly refer to social media platforms that transmit information in short videos, ranging from a few seconds to minutes (Xie et al., 2019). Short video platforms have become increasingly popular in recent years, especially after the outbreak of COVID-19. By June 2022, the number of users of short video platforms reached 962 million in China, accounting for 91.5% of the total Internet users (CNNIC, 2022). The appeal of these platforms is further evidenced by TikTok's impressive average engagement rate per follower of 6.72%, surpassing that of YouTube and making it the social media platform with the highest engagement rate in 2022 (Social Insider, 2022). Further, short video platforms have become an irreplaceable source from which people obtain physical activity information. For example, TikTok's physical activity challenges attract a massive audience, accumulating as many as 44.7 million views (Manuel, 2024). Despite the positive impacts of encountering LTPA-related information on short video platforms, the potential negative effects of social media misuse must be acknowledged. Previous research showed that excessive social media use can lead to various negative outcomes, such as decreased mental health, increased feelings of anxiety and depression, and reduced physical activity due to prolonged screen time (Primack et al., 2017; Twenge, 2019). This indicates the need for a balanced approach to social media consumption.

Primarily two types of motivation incite users to seek online social support from short video platforms: information acquisition and social interaction (Ahmad et al., 2016; Davis et al., 2014). The information acquisition motive refers to people's innate need to seek information to understand and share knowledge with others or to satisfy their own curiosity. However, the social interaction motive alludes to an internal psychological process that drives people to develop closer bonds with their friends, family, or other contacts based on their needs for social relationships (Wang et al., 2018, 2019). Modern short video platforms offer more than video viewing capabilities and include diverse interactive functions. For instance, users can engage in live broadcasts to interact in real time with influencers and other users. Also, they can comment on or like other users' videos, allowing them to share ideas. As such, short video platforms have evolved into extensive online communities

where people can acquire information, build social interactions, and perceive online social support (Hwang, 2022).

However, despite the high popularity of short video platforms, existing research about short video platforms and physical activities has mainly focused on the general function of guiding PA-related short videos (Bulca et al., 2022). What remains unclear is how short video platforms can predict individuals' LTPA intention through the avenue of online social support. That is, further exploration is required to identify the specific mechanisms, showing how short video platforms influence LTPA intention via online social support. Therefore, this study investigates the effects of online social support obtained from short video platforms on university students' LTPA intention. Specifically, this study examines the mediating role of TPB components, including attitude, subjective norm, and perceived behavioral control (PBC) based on the TPB, in the relationship between online social support and LTPA intention. This study contributes to extending the application of the TPB and adding to the existing literature on the significant role of sport-related short video platforms in promoting individuals' health. Based on the TPB (Ajzen, 1991) and previous research (Courneya et al., 2002; Zhang et al., 2015), this study suggests the following hypotheses and research model (Figure 1):

H1: Online social support is positively associated with LTPA intention.

H2: The effect of online social support on LTPA intention is mediated by affective attitude.

H3: The effect of online social support on LTPA intention is mediated by instrumental attitude.

H4: The effect of online social support on LTPA intention is mediated by subjective norms.

H5: The effect of online social support on LTPA intention is mediated by PBC.

Method

PARTICIPANTS AND RESEARCH PROCEDURE

Compared to other age groups, individuals aged 18–24, who comprise a significant portion of university students, represented the group with the highest percentage of individuals who prefer watching clips or highlights of sport contents (YouGov, 2023). Additionally, short form clips or highlights are favored in Asian markets, particularly among younger populations with high engagement with sports via social media; this trend is notable in coun-

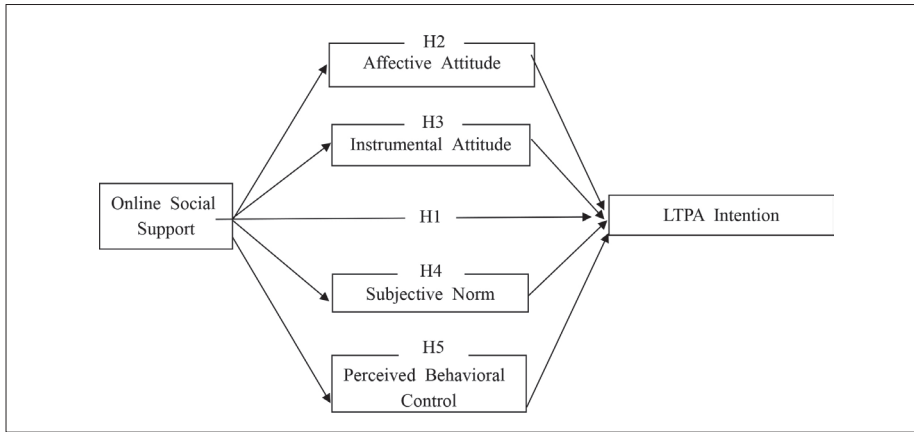


Figure 1. A hypothesized mode

tries such as China, Indonesia, and Singapore (YouGov, 2023). Therefore, this study collected data from university students using sport-related short video platforms in central China. Short videos related to sports include clips or segments that are connected to sports activities, competitions, or athletes. This study was conducted in accordance with the ethical guidelines and received approval from the authors' affiliated institution.

We recruited participants online from China's most commonly used social media platforms (e.g., WeChat, Weibo, TikTok, and Little Red Book) using the convenience sampling method. After agreeing to participate in the study, participants were sent a web link to the questionnaire; data collection was conducted using the Questionnaire Star platform (<https://www.wjx.cn>). Before commencing the survey, participants were provided with detailed information about the research objectives and procedures and asked to provide informed consent for their participation. They were informed that their participation was anonymous, and the collected data would be kept confidential. This study invited 1,210 individuals to participate in the survey, and a total of 503 questionnaires were collected. However, 28 responses that did not answer at least 50% of the survey questions were omitted. Thus, 475 responses were used to analyze data after conducting data screening. We conducted a power analysis to ensure that this study had sufficient statistical power to detect meaningful effects and found that our sample size is both statistically sound and feasible (power > 80%; Suresh & Chandrashekhara, 2012).

Most participants used TikTok's short video platform most often (59.6%), followed by Kwai (21.9%). Regarding the length of registration,

approximately one-third (33.7%) of the participants stated that they used a short video platform for more than one year and less than two years; 77.4% used it for more than six months and less than one year, 18.7% played it more than two years, and 20.2% played it for less than half a year. Concerning use frequency, almost three-quarters (70.7%) of the participants stated that they visited this short video platform once or more than once a day in the previous week. Moreover, 67.2% of the participants played short video platforms for more than one hour daily, and only 5.9% played them for less than 30 minutes daily. Regarding how often participants came into contact with LTPA-related information on short video platforms, the most selected response was “often” (34.5%), followed by “sometimes” (27.2%), “very often” (24.6%), “seldom” (9.7%), and “never” (4.0%).

MEASURES

The questionnaire asked the participants to rate their perceived online social support from short video platforms, attitude toward LTPA, subjective norm from significant others regarding LTPA, PBC of LTPA, their LTPA intention, and to provide personal information (e.g., gender, age, grade), as well as the condition of their use of short video platforms (e.g., register length, daily use time, use frequency).

Perceived online social support

Perceived online social support was assessed using the Social Influence on Physical Activity Questionnaire (SIPAQ; Chogahara, 1999). The SIPAQ divided social support into three dimensions: (1) companionship support, which means participating in an LTPA with others, (2) informational support, which means providing positive information about LTPA, and (3) esteem support, which refers to encouragement. Each part consists of five questions, and the original questionnaire includes 15 questions. The items were modified to meet the characteristics of the perceived online social support from short video platforms. Based on the features of short video platforms, two items of esteem support were deleted and the 13-item SIPAQ was used to measure the perceived online social support. The criteria for all questions included a 5-point Likert scale ranging from “never (1)” to “very often (5).” The original SIPAQ demonstrated good internal consistency (α ranges from 0.53 to 0.89), and the modified version has a Cronbach’s alpha of .88 in online condition (Zhang et al., 2015). The scores of the three dimensions were

tabulated, with a higher total score indicating higher perceived online social support related to LTPA on short video platforms. Cronbach's alpha values for the 13-item scale were 0.94.

Attitude

As recommended (Blanchard et al., 2008), both affective and instrumental attitudes were assessed using two sets of ten items (Okun et al., 2002). Affective attitude refers to emotion-based perceptions regarding a behavior, while instrumental attitude encompasses cognitive assessment of outcomes associated with a behavior (Hamilton & Johnson, 2020). Participants were asked to rate their emotions toward performing LTPA on semantic differential scales from one to five. Responses for both affective and instrumental attitudes were rated using five counterbalanced adjective scales (e.g., unpleasant-pleasant; useless-useful). Each group of adjective pairs was scored on a 5-point Likert scale from negative (1) to positive (5). To sum up the score of the five pairs, the higher score indicates a more favorable attitude toward participating in LTPA. Cronbach's alpha values for the two 5-item scales were 0.87 and 0.86, respectively.

Subjective norm

Subjective norm was assessed by three items developed by Ajzen (2006; e.g., "I think that if I were to participate in leisure time physical activities over the next month, people on this short video platform who influence my behavior would be..."). The answers were divided into three semantic differential items: disapproving and approving, unsupportive and supportive, and discouraging and encouraging. Each item was rated on a 5-point Likert scale from 1 to 5. Higher added scores indicated a higher possibility that the influencers on short video platforms were more approving of one's participation in LTPA. Cronbach's alpha of the three-item scale was 0.86.

Perceived behavioral control

Perceived behavioral control was measured by two items (Ajzen & Driver, 1992), "I have the resources required to engage in LTPA," and "For me, it is easy to engage in LTPA". Responses were given using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The composite score was calculated by adding up the two items; a higher score indicates a higher PBC. Cronbach's alpha of the two items was 0.89.

Intention

Intention to engage in LTPA was measured using the mean of three items suggested by Ajzen (2006) (e.g., “How motivated are you to participate in leisure time physical activities over the next month?”). Responses to these questions were given using a 7-point Likert scale ranging from 1 (not at all motivated; do not intend; not at all committed) to 7 (extremely motivated; strongly intended; completely committed). Cronbach’s alpha of the three items were 0.82.

DATA ANALYSIS

The descriptive analysis and frequency analysis were performed to understand the demographic figures of the participants and the current use situation of short video platforms among this group of university students. Pearson correlation analysis was carried out to display the correlation between each variable. This study also conducted confirmatory factor analysis to identify the internal consistency and validity of the measurement model. Next, to identify significant associations, constructs that showed significant correlations with LTPA intention were entered into a regression model to examine the causal relationship with LTPA intention. To test the mediation effects of TPB constructs in the relation between online social support and LTPA intention, the Bootstrap in the PROCESS macro with model 4 was employed (Hayes, 2013). SPSS 26.0 and IBM Amos 23.0 were used to analyze data in the current study.

Results

MEASUREMENT MODEL

The measurement model fit indices were acceptable: $\chi^2_{(df)} = 956.87/_{(866)} = 1.10$, CFI = 0.99, TLI = 0.99, RMSEA = 0.02; SRMR = 0.03. Next, this study tested the measurement model’s reliability, convergent, and discriminant validity. The results indicated composite reliability values were greater than 0.7, and average variance extracted (AVE) values were greater than 0.5, indicating acceptable internal consistency and convergent validity, respectively (Table I). Also, all variables were significantly correlated with each other. The square root of the AVE of LTPA intention (0.78), online social support (0.74), affective attitude (0.76), instrumental attitude (0.75), subjective norm (0.82), and PBC (0.83) were greater than the respective correlation coefficients, indicating acceptable discriminate validity (Table II).

TABLE I
Factor Loading (λ), Composite Reliability (CR), and AVE Values for the Measurement Model

| Factors and items | λ | CR | AVE |
|--|-----------|------|------|
| LTPA Intention (M = 5.24, SD = 1.40) | | 0.82 | 0.61 |
| (LTPA1) How motivated are you to participate in leisure time physical activities over the next month? | 0.73 | | |
| (LTPA2) How strongly do you intend to do everything you can to participate in any leisure time physical activities over the next month? | 0.84 | | |
| (LTPA3) How committed are you to doing any leisure time physical activity over the next month? | 0.76 | | |
| Online Social Support (M = 3.58, SD = 0.82) | | 0.94 | 0.54 |
| (OSS1) During the past 12 months, how often have the people on short video platforms made plans with you for doing physical activity together? | 0.83 | | |
| (OSS2) During the past 12 months, how often have the people on short video platforms teamed up with you to engage in a physical activity together? | 0.84 | | |
| (OSS3) During the past 12 months, how often have the people on short video platforms promised you that they would participate in a physical activity with you? | 0.69 | | |
| (OSS4) During the past 12 months, how often have the people on short video platforms given you helpful reminders to do a physical activity together with them? | 0.67 | | |
| (OSS5) During the past 12 months how often have the people on short video platforms changed their schedules so you could do a physical activity together with them? | 0.71 | | |
| (OSS6) During the past 12 months, how often have the people on short video platforms informed you about the expected positive effects of a physical activity on your health? | 0.71 | | |
| (OSS7) During the past 12 months, how often have the people on short video platforms explained to you why a physical activity is important to improve your health? | 0.71 | | |
| (OSS8) During the past 12 months, how often have the people on short video platforms suggested a physical activity program or facility which might assist your health? | 0.75 | | |
| (OSS9) During the past 12 months, how often have the people on short video platforms clarified how you may achieve your health goals through a physical activity? | 0.73 | | |
| (OSS10) During the past 12 months, how often have the people on short video platforms explained to you about the amount or intensity of physical activity necessary for improving your health? | 0.72 | | |
| (OSS11) During the past 12 months, how often have the people on short video platforms affirmed that you have done well in your physical activity? | 0.73 | | |
| (OSS12) During the past 12 months, how often have the people on short video platforms shown their respect for your versatility in physical activity? | 0.72 | | |
| (OSS13) During the past 12 months, how often have the people on short video platforms told you that you should be proud of your physical activity skills? | 0.73 | | |

(Continue)

Continue TABLE I

| Factors and items | λ | CR | AVE |
|---|-----------|------|------|
| Affective Attitude (M = 3.59, SD = 0.96) | | 0.87 | 0.57 |
| (AA1) To me, participating in leisure time physical activity is boring/interesting. | 0.72 | | |
| (AA2) To me, participating in leisure time physical activity is unenjoyable/enjoyable. | 0.86 | | |
| (AA3) To me, participating in leisure time physical activity is unpleasant/pleasant. | 0.76 | | |
| (AA4) To me, participating in leisure time physical activity is bad/good. | 0.73 | | |
| (AA5) To me, participating in leisure time physical activity is undesirable/desirable. | 0.71 | | |
| Instrumental Attitude (M = 3.57, SD = 0.90) | | 0.87 | 0.57 |
| (IA1) To me, participating in leisure time physical activity is harmful/beneficial. | 0.85 | | |
| (IA2) To me, participating in leisure time physical activity is useless/useful. | 0.73 | | |
| (IA3) To me, participating in leisure time physical activity is weak/strong. | 0.73 | | |
| (IA4) To me, participating in leisure time physical activity is passive/active. | 0.74 | | |
| (IA5) To me, participating in leisure time physical activity is foolish/wise? | 0.70 | | |
| Subjective Norm (M = 3.64, SD = 0.96) | | 0.86 | 0.68 |
| (SN1) I think that if I were to participate in leisure time physical activity over the next month, people on this short video platform who influence my behavior would be disapproving/approving. | 0.82 | | |
| (SN2) I think that if I were to participate in leisure time physical activity over the next month, people on this short video platform who influence my behavior would be unsupportive/supportive. | 0.77 | | |
| (SN3) I think that if I were to participate in leisure time physical activity over the next month, people on this short video platform who influence my behavior would be discouraging/encouraging. | 0.88 | | |
| Perceived Behavioral Control (M = 3.74, SD = 0.99) | | 0.80 | 0.67 |
| (PBC1) I have the resources required to engage in leisure time physical activity. | 0.76 | | |
| (PBC2) For me, it is easy to engage in leisure time physical activity. | 0.87 | | |

Note. LTPA = leisure time physical activity intention, OSS = online social support, AA = affective attitude, IA = instrumental attitude, SN = subjective norm, PBC = perceived behavioral control.

REGRESSION ANALYSES

The multiple linear regression analysis was conducted to test the predictive effects of both the original TPB model and the extended TPB model with online social support on participants' LTPA intention. This was completed after controlling for the covariates of age, gender, grade, use frequency, length of membership, and daily use time of short video platforms. The results of the regression analysis indicated that the original TPB model explained approximately 44.1% of the variance in LTPA intention ($R^2 = 0.44$, $F(11,463) = 33.17$, $p < .001$). After adding online social support to the TPB

TABLE II
Values of correlation and squared root of AVE among all factors

| | LTPA | OSS | AA | IA | SN | PBC |
|------|------------|------------|------------|------------|------------|------------|
| LTPA | .78 | | | | | |
| OSS | .59* | .74 | | | | |
| AA | .49* | .56* | .76 | | | |
| IA | .28* | .51* | .30* | .75 | | |
| SN | .56* | .52* | .34* | .20* | .82 | |
| PBC | .32* | .42* | .32* | .18* | .31* | .83 |

Note. LTPA = leisure time physical activity intention, OSS = online social support, AA = affective attitude, IA = instrumental attitude, SN = subjective norm, PBC = perceived behavioral control, Values in the diagonal (bold) represent the square root of AVE, *p-value <.05.

model, the extended TPB model explained approximately 47.4% of the variance in LTPA intention, which explained 3.3% more than the original model. In the current expanded TPB model in predicting LTPA intention, affective attitude ($\beta = 0.19$, $SE = 0.06$, $t = 4.59$, $p < .001$), subjective norm ($\beta = 0.35$, $SE = 0.06$, $t = 8.69$, $p < .001$), and online social support ($\beta = 0.27$, $SE = 0.09$, $t = 5.39$, $p < .001$) significantly and directly predicted university students' intention to participate in LTPA. The instrumental attitude and PBC were not significantly associated with LTPA intention (Table III).

TABLE III
Regression analyses

| | IV | DV | R ² | B | β | t |
|---|-----|----------------|----------------|-----|---------|----------|
| 1 | AA | LTPA Intention | .44 | .40 | .27 | 6.80*** |
| | IA | | | .16 | .11 | 2.86** |
| | SN | | | .63 | .43 | 11.22*** |
| | PBC | | | .13 | .10 | 3.42*** |
| 2 | AA | LTPA Intention | .47 | .28 | .19 | 4.59*** |
| | IA | | | .02 | .01 | 0.25 |
| | SN | | | .51 | .35 | 8.69*** |
| | PBC | | | .06 | .04 | 1.08 |
| | OSS | | | .47 | .27 | 5.39*** |

Note. *p < .05, **p < .01, ***p < .001

MEDIATING EFFECTS

The Process Macro via the bootstrapping method with model four was applied to consider whether the TPB components (i.e., affective attitude, instrumental attitude, subjective norm, and PBC) mediate the relationship between online social support and LTPA intention. This study calculated the bias-corrected 95% confidence interval (CI) around the indirect effect from 5000 bootstrap re-samples. The indirect effect was considered statistically significant only if its bias corrected 95% CI excluded 0. As shown in Table 4, there was a significant total effect of online social support on LTPA intention ($\beta = .47, p < .001$). The indirect effects of online social support were significant through the mediators of affective attitude ($\beta = .17, 95\% \text{ CI} = [.09, .26]$) and subjective norm ($\beta = .30, 95\% \text{ CI} = [.22, .39]$). However, no significant indirect effects of online social support through instrumental attitude ($\beta = .01, 95\% \text{ CI} = [-.06, .08]$) and PBC ($\beta = .03, 95\% \text{ CI} = [-.02, .08]$) were found since the 95% CI contained the value 0. Table IV.

TABLE IV
Mediation analyses

| Independent variable | Mediation variable | LTPA Intention (Outcome) | | |
|-----------------------|-----------------------|--------------------------|-----------|-------------|
| | | β | SE (boot) | 95% CI |
| Online social support | Affective attitude | .17 | .04 | [.09, .26] |
| | Instrumental attitude | .01 | .04 | [-.06, .08] |
| | Subjective norm | .30 | .04 | [.22, .39] |
| | PBC | .03 | .03 | [-.02, .08] |

Notes. Covariates controlled in the model including age, gender, grade, use frequency, daily use time, and length of membership of short video platforms. PBC = perceived behavioral control, SE = standard error of the estimate, CI = confidence interval.

Discussion

This study examined the impact of online social support from short video platforms on LTPA intention by extending the TPB. We addressed a research gap and highlighted the importance of sport-related short video platforms in individuals' health behavior. We identified both direct and indirect effects of online social support from short video platforms on individuals' intention to engage in LTPA. This study showed meaningful findings, contributed to

and expanded upon existing research, and suggested that sport-related short videos considerably influence individuals' likelihood of pursuing LTPA.

THEORETICAL IMPLICATIONS

The results of this study provide valuable insights into the factors influencing LTPA intention. Specifically, affective attitude and subjective norm were found to be significant predictors of LTPA intention, aligning with previous studies (Blanchard et al., 2008; Wing Kwan et al., 2009; Zhang et al., 2015). The findings provide additional supporting evidence for the TPB's efficacy in explaining and predicting physical activity-related behaviors. Moreover, this study found the direct effect of online social support on LTPA intention, which is consistent with previous research in real-life settings, that social support made a unique contribution to LTPA intention (Courneya et al., 2002). This finding suggests that social support is critical in influencing physical activity intention. That is, one's perceived social support from external factors can enhance their intention to engage in a particular physical activity. Additionally, the expectations and support from significant others can also contribute to shaping their intention to be physically active (Rhodes et al., 2002). The constructs (i.e., affective attitude, subjective norm, and online social support) collectively explained approximately 47% of the variance in LTPA intention, underscoring the considerable influence that the TPB exerts in understanding the factors influencing university students' intentions to engage in LTPA.

However, contrary to previous research that identified PBC as a predictor of LTPA intention (McEachan et al., 2011; Phipps et al., 2021), the findings of this study showed different results. That is, this study did not find a significant effect of PBC on LTPA intention, which is inconsistent with the theoretical underpinnings of the TPB (Ajzen, 1991). Further, we found that the instrumental valuation of LTPA fails to account for the underlying substantive causes of this effect. It indicates that individuals' confidence in their ability to engage in LTPA and their instrumental evaluation of its benefits do not explain the underlying reasons for the observed effect of online social support on LTPA intention in this context. This discrepancy highlights the potential influence of online social support from short video platforms and underscores the complexity and variability of human behavior. Moreover, the results highlight the complex mechanisms through which online social support influences LTPA intention, and that emotions and social norms play significant roles in influencing behavior. This suggests that unique contextual factors might influence the relationship between PBC, instrumental attitude,

and LTPA intention. In other words, this result provides new insights into the intricate interplay between online social support, individuals' psychological responses, and behavioral intention related to LTPA. Future research can explore the specific contextual factors and mechanisms contributing to the observed differences in the relationship between PBC and LTPA intention in a particular population.

The findings further indicate that affective and instrumental attitudes contributed differently to the prediction of LTPA intention. Specifically, affective attitude showed a statistically significant effect on LTPA intention, indicating that emotional responses toward LTPA are critical in influencing individuals' intention to engage in physical activities. However, instrumental attitude did not significantly affect LTPA intention, indicating that the perceived practical values or benefits associated with LTPA might not strongly influence individuals' intention. This finding corresponds with the results of previous research on the effects of affective and instrumental attitudes in predicting intention. For example, it was found that affective attitude strongly predicts one's LTPA intention with a moderate to high effect size, while the association between instrumental attitude and LTPA intention tends to be weak or even null (French, 2005; Lowe et al., 2002; Rhodes et al., 2009). This suggests that affective emotions toward LTPA significantly influence behavioral performance and intention more than instrumental valuation. However, it is worth noting that some studies affirmed the predictive effects of instrumental attitude on LTPA intention (Wang, 2009; Zhang et al., 2015). Therefore, future research must continue to investigate the predictive role of instrumental attitude in various populations and settings to understand its influence on LTPA.

This study also found that online social support indirectly predicted LTPA intention through affective attitude and subjective norms. However, contrary to the hypothesized association, no mediation effects of instrumental attitude and PBC have been found. These findings suggest that university students' pleasant emotions and perception of significant others' norms are key in explaining the internal relationship between online social support from short video platforms and LTPA intention. In other words, when individuals receive social support through short video platforms, it positively affects their emotional response and influences their perceptions of social norms, shaping their intention to engage in LTPA. The nature of social support on short video platforms might be different from that of traditional SNSs or chats. While traditional platforms rely on interactions with known contacts, short video platforms offer a unique form of support. For instance, watching an influencer's fitness video can still evoke feelings of motivation,

inspiration, and camaraderie, thereby fostering a supportive environment for physical activity engagement.

However, it is essential to acknowledge that the dynamics of support and its effectiveness may vary across different types of social media platforms. That is, different sources of social support may incite different paths of internal influence on LTPA intention (Duncan et al., 2005; Springer et al., 2006). The dissimilarity in findings between this study and previous research by Zhang et al. (2015) on chat-based SNSs underscores the importance of considering the unique characteristics and mechanisms of social support within each platform. Notably, short video platforms provide a more diverse range of sources for social support compared to chat-based networks, potentially influencing individuals' attitudes and behaviors differently. Moreover, variations in sample characteristics, such as age and nationality, could also contribute to discrepancies in results, as different demographics may perceive and respond to social support in distinct manners (Mendoca & de Farias Júnior, 2015). Understanding these nuances is crucial for designing targeted interventions aimed at promoting physical activity through online social support.

The current study extends the existing literature on online social support by highlighting the significant role of sport-related short video platforms in improving health behavior. The findings of this study provide theoretical implications for elucidating the influencing path of online social support on university students' LTPA intention based on the TPB. Specifically, results suggest that their intention to participate in LTPA behaviors can be improved by online social support from short video platforms or through the mediators of affective attitude and perceived subjective norm toward the physical activity behaviors. Researchers have similarly examined the effects of social support on exercise participation in offline settings (Courneya & McAuley, 1995; Hamilton & White, 2008; Okun et al., 2003), as well as the novel communication channel of SNSs (Zhang et al., 2015). Behavioral intention and actual behavior must be differentiated. Behavioral intention is considered a critical factor in influencing actual behavior (Ajzen, 1991) and shows a strong relationship with action, as indicated by a large effect size of Cohen's *d* (Sheeran, 2002). In the context of LTPA, external factors can wield significant influence over the intention-behavior dynamic. Research suggests that individuals with strong intention to engage in LTPA are more likely to do so, but actual engagement depends on their ability to overcome barriers (Rhodes & de Bruijn, 2013). Thus, future studies should explore strategies to bridge the intention-behavior gap to better understand and enhance the likelihood of converting intention into real behavior.

PRACTICAL IMPLICATIONS

This study also suggests practical implications by highlighting the power of short video platforms to provide tailored social support, ultimately fostering positive changes in university students' LTPA behavior. Specifically, the evidence provided by this research can serve as a basis for developing future interventions to address the lack of LTPA behaviors among university students. By providing them with online social support offered by the different channels of short video platforms, such as short videos, live broadcasts, and comments, tailored interventions can be designed to improve LTPA participation. In particular, LTPA promotion interventions based on short video platforms can be developed to help university students acquire social support that targets and promotes their affective attitude and perceived subjective norm toward participation in LTPA. By leveraging students with informational social support through short videos that address the enjoyable aspects of exercise, they can raise their LTPA intention. In other words, students can be encouraged to recognize informational social support by watching short videos addressing their affective attitude toward LTPA (e.g., You will find it enjoyable to exercise in your spare time). In addition, by joining exercise-related live broadcasts and chatting with others, they can feel companionship and social support and develop a sense of belonging and the belief that they can receive positive expectations and encouragement from others regarding their LTPA behaviors. Apart from previously illustrated implications, short video platforms can provide social support that enhances university students' intention to participate in LTPA in various other ways to improve their LTPA behavior.

LIMITATIONS AND FUTURE RESEARCH

Although this study has provided valuable insights, we should acknowledge some limitations. The first limitation is inherent in the cross-sectional studies conducted using self-report surveys. As the data was collected at a specific point, it is challenging to conclude the causation and directionality of the relationship tested in the current study. To address this limitation, future research can use longitudinal and experimental designs with a control group over an extended period to further determine the causality direction between these constructs and the impacts of online social support on the actual execution of physical activity behaviors. Additionally, future research can compare the effects of various online social support sources with short

video platforms. By doing so, researchers can explore and identify the different effects of social support provided through diverse communication channels. Understanding the distinctions can contribute to a more comprehensive understanding of how different types of online social support influence individuals' LTPA intention and health behaviors. Finally, this study explored how often participants encountered LTPA-related videos on short video platforms; however, it did not account for whether participants were already motivated to engage in LTPA prior to watching these videos or if they watched them owing to an existing enjoyment of LTPA. This distinction is important as it could influence the intention to engage in LTPA. Future research should investigate the pre-existing motivation and enjoyment levels of participants to determine the causal relationship between video exposure and LTPA intention. Further, we did not clarify whether participants were actively searching for these videos, encountering them out of curiosity, or receiving algorithmic recommendations from the platforms. Thus, future research should distinguish between these different types of video encounters to provide a more nuanced understanding of information-seeking behaviors.

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