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Unlocking the Secrets of Bedtime Procrastination: The Role of Self–Control, Chronotype, and Future Time Perspective in Malaysian Young Adults

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Bedtime procrastination, a voluntary behavior of sleeping later than the intended time, is a prevalent issue in modern society, yet being understudied in Malaysia. It brings health-interfering impacts such as sleep deficiency, which in turn could affect the physical and mental health of the individual. This research examined the predictive effects of self-control, chronotype, and future time perspective on bedtime procrastination, with the hypothesis that self-control, chronotype, and future time perspective could negatively predict bedtime procrastination. A quantitative cross-sectional study design was implemented. Data was collected from 108 young adults aged between 19 and 29 across different states in Malaysia using the Bedtime Procrastination Scale (BPS), Brief Self-Control Scale (BSCS), Morningness-Eveningness Questionnaire (MEQ), and Zimbardo Time Perspective Inventory (ZTPI) Future Subscale. The convenience sampling method was employed by distributing Qualtrics online survey via email and social media. Multiple Linear Regression analysis was run to examine the hypotheses using SPSS Version 23. Significantly, self-control and chronotype negatively and positively predict bedtime procrastination respectively. Future time perspective is not a significant predictor of bedtime procrastination. This study provides insights into the concept of bedtime procrastination for practitioners to design effective interventions and a direction for future studies to further explore the underlying factors of bedtime procrastination.

Keywords: bedtime procrastination, self-control, chronotype, future time perspective, young adults

Bedtime procrastination is the behavior of not going to bed at the intended time without external reasons (Kroese, de Ridder, Evers, & Adriaanse, 2014a), while the negative consequences of such behavior are known by the individual (Liang, 2020). It may result in sleep deficiency, lower sleep quality, and daytime fatigue (Massar & Chee, 2019). Subsequently, it brings negative impacts on physical and mental health, such as anxiety and depression (Chung, An, & Suh, 2020; Guo, Meng, Ma, Zhu, & Yang, 2020; Rubin, 2020), hypertension, and cardiovascular issues (Fang, Wheaton, Keenan, Greenlund, Perry, & Croft, 2012; Sekine, Daimon, Hasegawa, Toyoda, Kawata, Funabashi, & Komuro, 2010). Sleep deprivation, as a result of bedtime procrastination, also affects one's cognitive domains such as working memory, ability to make decisions, and attention (Diekelmann & Born, 2010). Bedtime procrastination is therefore regarded as a health-interfering behavior.

In this day and age, bedtime procrastination is a common and escalating issue in modern society (Geng, Wang, & Zhang, 2021;

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Kamphorst, Nauts, de Ridder, & Anderson, 2018; Nauts, Kamphorst, Sutu, Poortvliet, & Anderson, 2016). Young adults are especially prone to bedtime procrastination (Chung et al., 2020; Herzog-Krzywoszanska & Krzywoszanski, 2019).

Researchers postulated that people who have fewer self-regulatory resources available due to depletion after daytime obligations will more likely procrastinate sleep to reward themselves with some leisure at intended bedtime (Kamphorst et al., 2018; Nauts, Kamphorst, Stut, de Ridder, & Anderson, 2018), to restore the resources when they can control their activities at night (Kühnel, Syrek, & Dreher, 2018).

Bedtime procrastination is mainly due to the failure to disengage from the activities before bedtime (Pu, Leong, Chee, & Massar, 2022). Kroese et al. (2014a) revealed that people with lower self-control are more inclined to bedtime procrastination because it is difficult for them to quit their activities before bedtime. Self-control refers to the capacity of an individual to override or alter their undesired, dominant response and behavioral tendencies as well as to regulate their thoughts, emotions, and behavior (Carver & Scheier 1981; Carver & Scheier, 1982; Tangney, Baumeister, & Boone, 2004; Vohs & Baumeister 2004). Self-control enables individuals to refrain from unbeneficial actions and enhances their motivation to initiate a task that is in line with self or social expectations to pursue long-term goals (Baumeister, Vohs, & Tice, 2007; Przepiórka, Błachnio, & Siu, 2019). Past studies have shown a negative association between self-control and bedtime procrastination, as individuals with lower self-control are more likely to give in to the short-term gratification of leisure activities or environmental distractions at their intended bedtime (Exelmans & Van den Bulck, 2021; Kroese, Evers, Adriaanse, & de Ridder, 2014b; Mao, Chen, Wei, Luo, & Liu, 2022).

Chronotype, commonly referred to as individual differences in sleep-wake rhythms (Kühnel et al., 2018) and preferences (Kadzikowska-Wrzosek, 2018), has been found to be negatively associated with bedtime procrastination, which means that "eveningness" people (i.e., those who prefer to sleep later and rise later) are more susceptible than "morningness" people (i.e., those who prefer to sleep earlier and are more active during daytime) to bedtime procrastination (Chung et al., 2020; Kühnel et al., 2018; Przepiorka et al., 2019).

Additionally, Kühnel et al. (2018) found that the negative relationship between chronotype and bedtime procrastination was stronger on earlier workweek days (e.g., Monday and Tuesday) than on later workweek days (e.g., Wednesday and Thursday), due to the experience of social jetlag (i.e., misalignment between individual's chosen sleep-wake-time and socially imposed schedules) that causes difficulties to adjust from one's biologically preferred bedtime to the socially induced bedtime at the beginning of the workweeks (Roenneberg, 2012). As days pass, individuals accumulate more sleep debt, their homeostatic sleep drive increases, which lessens the effects of social jetlag (Roenneberg, Wirz-Justice, & Merrow, 2003).

Future time perspective (FTP) was found to have a prominent association with procrastination (Sirois, 2014) and health-related behavior such as bedtime procrastination (Chung et al., 2020; Okay, Turkarslan, Cevrim, & Bozo, 2022). FTP refers to one's thoughts about and concern for their future (Kooij, Kanfer, Betts, & Rudolph, 2018; Mohammed & Marhefka, 2020). FTP was found to have a negative predictive effect on bedtime procrastination (Chen, Zhang, Lin, Pang, Cheng, & Si, 2022; Mao et al., 2022; Okay et al., 2022), as people with less future-oriented thinking focus more on present enjoyment (Sirois, 2014).

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According to the Temporal Self-Regulation Theory (TST) developed by Hall and Fong (2007), behavioral intention, behavioral prepotency, and self-regulatory capacity can influence one's observed behavior. In the present study, self-control is viewed as self-regulatory capacity, chronotype as behavioral prepotency, and FTP as behavioral intention, all of which impact bedtime procrastination as the observed behavior in TST.

Behavioral intention refers to the conscious decision on whether or not to perform a behavior, by evaluating the positive and negative consequences of the behavior (Hall & Fong, 2007). According to Mao et al. (2022), it is a result of connectedness belief (i.e., one's belief about how his or her present behavior consistently leads to future outcome) and temporal valuations (i.e., how much value the person gives to the future outcome). Behavioral prepotency is the quantifiable value which reflects the frequency of past behaviors, habits, or an individual's default response to environmental cues (Hall & Fong, 2007). Self-regulatory capacity refers to the person's cognitive ability to exert control over their own behavior, feelings, and thoughts to prevent undesirable responses (Cameron & Webb, 2013; de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012).

Most of the previous studies have focused more on examining the lifestyle factors (e.g., sedentary behaviors, diet, smartphone use) contributing to sleep deprivation (Naito, Low, & Choo, 2021; Peltzer & Pengpid, 2019) rather than bedtime procrastination in the psychological context. Besides that, previous researchers mainly conducted studies on general procrastination (Przepiórka et al., 2019; Zabelina, Chestyunina, Trushina, & Vedeneyeva, 2018) and various domains of procrastination, primarily academic or workplace procrastination (Prem, Scheel, Weigelt, Hoffman, & Korunka, 2018; Siah, Lee, & Kee, 2021). There is limited literature on bedtime procrastination, particularly in the Malaysian context. Most studies on bedtime procrastination have been conducted overseas, such as in China (Mao et al., 2022), Belgium (Exelmans & Van den Bulck, 2021), Korea (Chung et al., 2020), and Turkey (Okay et al., 2022). Considering the adverse outcomes of bedtime procrastination, the current study aims to fill in these research gaps in the local context by focusing on bedtime procrastination and examining the predictive effects of self-control, chronotype, and future time perspective for prevention and intervention development. Based on the past studies, the current study hypothesized that:

H_1: Self-control negatively predicts bedtime procrastination among Malaysian young adults,

H_2: Chronotype negatively predicts bedtime procrastination among Malaysian young adults,

H_3: FTP negatively predicts bedtime procrastination among Malaysian young adults.

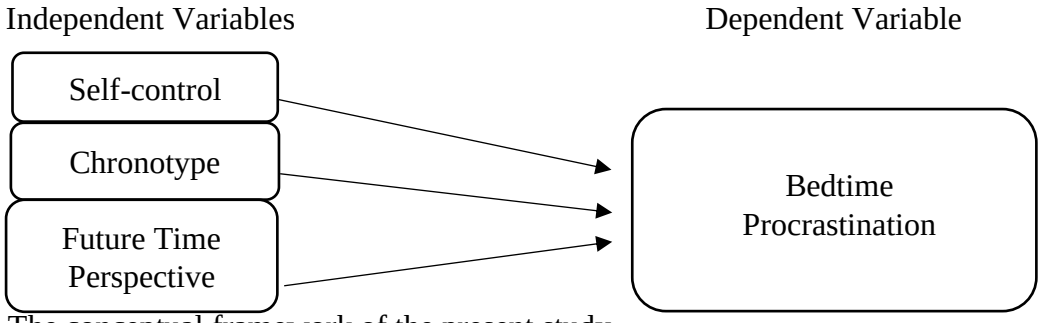

Figure 1 The conceptual framework of the present study.

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Method

Participants

The convenience sampling method was used in this study. The participants of this study are 108 Malaysian young adults aged between 18 to 29 years old (Arnett, 2015) who had no sleeping disorder (e.g., insomnia, narcolepsy) and were not working on shift. Qualtrics questionnaire web link was distributed to the participants across the states via UTAR email and social media platforms such as Facebook, Instagram, Xiaohongshu, WhatsApp, and WeChat. This research has been approved by the Universiti Tunku Abdul Rahman's ethics review board before research was being carried out. Information about the study, including the title, purpose, and informed consent, which ensured the confidentiality of the data collected, the anonymity of participants, and the use of data solely for academic purposes, was presented to participants at the beginning of the questionnaire. An eligibility checking section was included after the informed consent. Participants were not allowed to proceed with answering the questionnaire if they disagreed with the informed consent or did not meet the selection criteria. Participants were informed about their rights to withdraw from the study at any time, either during or after the survey.

Instruments

The instruments included in this study were Bedtime Procrastination Scale (BPS), Brief Self-Control Scale (BSCS), Morningness-Eveningness Questionnaire, (MEQ), and Zimbardo Time Perspective Inventory (ZTPI) Future Subscale. All the scales were presented in English. SPSS Version 23 was used for the data analysis in this study.

Bedtime Procrastination Scale (BPS)

The Bedtime Procrastination Scale (BPS) developed by Kroese et al. (2014a) was used to measure the level of bedtime procrastination. There are 9 items, using 5-point Likert scales ranging from 1 (*Almost never*), 2 (*Rarely*), 3 (*Sometimes*), 4 (*Frequently*), to 5 (*Almost always*), with items 2, 3, 7, and 9 as reversed items. The total scores of the scale range from 9 to 45, in which higher scores indicate higher levels of bedtime procrastination. The reliability of the scale was high in the original study, the pilot study, and the current study, with Cronbach's α of .92, .859 and .852, respectively.

Brief Self-Control Scale (BSCS)

Brief Self-Control Scale (BSCS) developed by Tangney et al. (2004) was used to measure the level of the trait self-control of the young adults. It is a 13-item scale using 5-point Likert scales ranging from 1 (*Not at all*), 2 (*Only a little*), 3 (*To some extent*), 4 (*Rather much*), to 5 (*Very much*). The reversed items include items 2, 3, 4, 5, 7, 9, 10, 12, 13. The total scores of the scale range from 13 to 65. Higher total scores indicate higher levels of self-control. The reliability of BSCS was high in the original studies with Cronbach's α of .83 and .85 in Study 1 (i.e., conducted among undergraduate students aged between 18 to 55) and Study 2 (i.e., conducted among undergraduate students aged between 18 to 49), respectively. The reliability in the pilot study and current study were also high with Cronbach's α of .885 and .866 respectively.

Morningness-Eveningness Questionnaire (MEQ)

Morningness-Eveningness Questionnaire (MEQ) developed by Horne and Ostberg (1976) is used to measure an individual's chronotype. This scale consists of 19-items measuring two different factors, which are morningness and eveningness, through 4-point Likert scales and time scales. Items 1, 2, 10, 11, 15, 17 and 18 are time scales while items 3 to 9, 12, 13, 14, 16, and 19 are 4-point likert scales. The total scores range between 16 to 86, a lower total score

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indicates more eveningness while a higher total score indicates more morningness (Horne & Ostberg, 1976). The reliability reported in the original study was high, with Cronbach's α = .82 (Smith, Reilly, & Midkiff, 1989).

However, due to the low reliability in the pilot study, which is .315, items 12, 14 and 16 were removed in the actual study to improve the scale reliability. This made up a new total score ranging from 13 to 74 and a good reliability of .700.

Zimbardo Time Perspective Inventory (ZTPI) Future Subscale

The future subscale of Zimbardo Time Perspective Inventory (ZTPI) developed by Zimbardo and Boyd (1999) is used to measure the participants' future time perspective (FTP). The 13 items in the subscale are using 5-point Likert scales, which range from 1 (*Very uncharacteristic*), 2 (*Uncharacteristic*), 3 (*Neutral*), 4 (*Characteristic*), to 5 (*Very characteristic*). Item 9, 24, and 56 (Item 2, 7, 13 in this survey questionnaire for FTP) are reversed items. The scores of each item are summed up and then divided by 13. Higher scores indicate greater FTP. The subscale has a high reliability in the original study, with an internal consistency of α = .77. The reliability in the pilot study and this study were also considered as acceptable, with Cronbach's α of .766 and .660 respectively (Creswell, 2012).

Results

A total of 216 sets of responses were collected before the data-cleaning process. After data cleaning, a total of 102 data sets were removed because participants dropped out in the middle of the survey, resulting in incomplete data sets. This contributes to a total of 114 data sets remaining. One attention-checking question was included in the middle of the survey to check on the participants' attention. The results from 6 data sets showed that the participants were not paying attention to the survey; thus, their responses were removed, resulting in a total of 108 responses.

Table 1 presents the descriptive statistics of the participants' age. The average age range of 108 participants is 22.27 (M = 22.27, SD = 1.893), ranging from 19 to 29 years old. Among the participants, 57.4% (n = 62) of the participants are female while 42.6% (n = 46) are male. Besides that, 79 out of 108 participants (73.1%) in this study are students, another 26 (24.1%) are employed and only 3 of them (2.8%) are unemployed. 29.6% of the participants are living in Perak, followed by Selangor (25%), Penang (23.1%), Kedah (6.5%), Sarawak (5.6%), Perlis (4.6%), Johor (3.7%), Negeri Sembilan (0.9%), and Kelantan (0.9%).

Furthermore, Table 1 presents the mean and standard deviation of the dependent variable, which is bedtime procrastination (M = 30.45, SD = 6.394) and the three independent variables, which are self-control (M = 39.79, SD = 8.472), chronotype (M = 44.19, SD = 6.139), and future time perspective (M = 3.42, SD = .449). The results indicate that participants are more likely to be of the morningness type. They exhibit moderately high levels of bedtime procrastination and self-control, along with a slightly lower future time perspective.

Multiple Linear Regression analysis was run to examine the contribution of self-control, chronotype, and future time perspective on bedtime procrastination. Table 3 demonstrates that the model was statistically significant, $F(3, 104) = 14.897$, $p < .001$, accounting for 28.0% of the variance (refer to Table 2 for Adjusted R^2). As shown in Table 4, self-control (β = -.445, $p < .001$) was found to be the significant negative predictor of bedtime procrastination among Malaysian young adults. Meanwhile, chronotype (β = .283, p = .001) was also a significant predictor, but it positively predicts bedtime

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procrastination, which contradicts the direction of the hypothesis. Lastly, it was discovered that the future time perspective (β = .025, p = .795) is not a significant predictor of bedtime procrastination among Malaysian young adults.

In sum, only one hypothesis is supported based on the results, that is, self-control negatively predicts bedtime procrastination among Malaysian young adults. The results of this present research do not support the other two proposed hypotheses.

Table 1

Descriptive Statistics of Age, Bedtime Procrastination, Self-Control, Chronotype and Future Time Perspective

Variables	*M*	*SD*
Age	22.27	1.893
Bedtime Procrastination	30.45	6.394
Self-control	39.79	8.472
Chronotype	44.19	6.139
Future Time Perspective	3.42	0.449

Note. *M* = Mean; *SD*= Standard deviation.

Table 2

Model Summary

Model	*R*	*R* Square	Adjusted *R* Square
1	.548[a]	.301	.280

a. Predictors: (Constant), Future Time Perspective, Chronotype, Self-control

b. Dependent Variable: Bedtime Procrastination

Table 3

ANOVA Table

Model		Sum of Square	*df*	Mean Square	*F*	Sig.
1	Regression	1314.917	3	438.306	14.897	.000[b]
	Residual	3059.851	104	29.422		
	Total	4374.769	107			

a. Dependent Variable: Bedtime Procrastination

b. Predictors: (Constant), Future Time Perspective, Chronotype, Self-control

Table 4

Regression (Coefficients)

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	Std. Error	Beta	*t*	Sig.
1	(Constant)	29.544	6.274		4.709	.000
	Self-control	-.336	.073	-.445	-4.602	.000
	Chronotype	.295	.088	.283	3.362	.001
	Future Time Perspective	.363	1.394	.025	.260	.795

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Discussion

The present study examined self-control, chronotype, and future time perspective as predictors of bedtime procrastination. However, the results only support the first hypothesis (H_1).

Self-control is found to be a significant negative predictor of bedtime procrastination among Malaysian young adults. Supporting the findings of the previous studies (Bernecker & Job, 2020; Exelmans & Van den Bulck, 2021; Geng et al., 2021; Mao et al., 2022), this study replicated the negative link between self-control and bedtime procrastination. It is also congruent with a recent meta-analysis which provided evidence that bedtime procrastination is moderately associated with lower self-control (Hill, Rebar, Ferguson, Shriane, & Vincent, 2022).

This finding further supports the idea that young adults with lower self-control are generally less capable of resisting environmental distractions, temptations and stimuli. Rather than focusing on the long-term goals and consequences of going to bed on time, they are more impulsive to the short-term gratifications offered by social or leisure evening activities such as playing video games, watching Netflix shows, or scrolling smartphone at the intended bedtime (Hill et al., 2022; Kroese et al., 2014b; Ramzi & Saed, 2019). On the other hand, young adults with higher self-control are less inclined to engage in bedtime procrastination because self-control enables them to put off immediate satisfactions offered by other stimuli in favor of a more significant long-term benefit, such as waking up fresh and rested as a result of going to bed on time (Gillebaart, 2018).

The result of this study indicated that chronotype significantly and positively predicted bedtime procrastination, which does not support the hypothesis of a negative predictive relationship (H_2). In other words, the result of this study shows that individuals with higher chronotype scores, indicating a morningness type, tend to have higher levels of bedtime procrastination compared to those with lower chronotype scores. This finding shows inconsistency with the findings from past studies (Kadzikowska-Wrzosek, 2018; Lin & Chung, 2022; Taylor & Hasler, 2018).

This finding can be explained by the individual's depletion of self-regulatory resources. Individuals with a morningness type may procrastinate their bedtime as a way to restore these resources at the end of the day, possibly after expending significant self-regulatory effort in the morning to suppress their desires. Thus, they end up doing something else at their preferred bedtime as a way to restore the resources instead of sleeping (Hofmann, Baumeister, Förster, & Vohs, 2012; Hofmann, Vohs, & Baumeister, 2018).

Moreover, the finding that morningness (i.e., lower chronotype scores) positively predicts bedtime procrastination may be related to the social structural demands where individuals are forced to modify their waking hours which may disrupt their lifestyles and circadian rhythm (Hughes, Attarian, & Hirayama, 2022). Given that the sample of this study comprised students and working adults, their wake-up times may be uncontrollable, such that they have to wake up early in the morning for work and studies. As a result, they tend to be expressed as morning people (Baehr, Revelle, & Eastman, 2000). Regardless of their inability to control their wake times, they still have control over their sleep time. The depleted self-regulatory resources may be restored through night activities at their intended bedtime.

Additionally, another finding does not support the hypothesis of FTP as a predictor of bedtime procrastination (H_3). FTP is not a significant predictor of bedtime procrastination in the current study, which

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is inconsistent with the findings from past studies that revealed FTP as a significant negative predictor such that people with a lower future time perspective have a higher tendency to engage in bedtime procrastination (Chen et al., 2022; Mao et al., 2022; Meng et al., 2021; Okay et al., 2022).

A meta-analysis (Andre, Van Vianen, Peetsma, & Oort, 2018) suggested that FTP predicts individual behavioral intention and actual behavior in different domains (i.e., education, work, and health), but its effect across these life domains is less significant. The FTP scale used in the current study includes items related to setting goals and making plans, which may have been perceived as academic-related and work-related plans. As a result, they may not necessarily be a significant driver of health-related intention and behavior (e.g., getting sufficient sleep), reducing the significance of FTP as a predictor of bedtime procrastination.

Plausibly, there is a high tendency that people engage in flow activities before bedtime, which makes them lose track of time (Nauts et al., 2018). For example, social media use is likely a flow experience that is characterized by total immersion and distorted perception of time (Brailovskaia, Schillack, & Margraf, 2020; Kaur, Dhir, Chen, & Rajala, 2016; Kwak, Choi, & Lee, 2014). This time distortion is likely to alter the perception of the future when engaging in flow activities (Blom, Nanuashvili, & Waters, 2021). In this case, future time perspective would be less of a significant determinant for bedtime procrastination.

The current finding further consolidates the role of the self-control variable as the self-regulatory capacity in the TST (Hall & Fong, 2007), indicating that young adults with lower self-control are more susceptible to bedtime procrastination because they have lower capacity to regulate their behavior, thoughts, and feelings to prevent undesired tendencies.

The finding of a positive association between chronotype and bedtime procrastination does not deny the relevance of TST in explaining the relationship between chronotype as the behavioral prepotency and bedtime procrastination as the observed behavior. As a significant predictor of bedtime procrastination, chronotype plays a role as the behavioral prepotency such that one's sleep-wake rhythm influences them to engage in a particular behavior which they engaged in the past.

Future time perspective was found to be non-significant in predicting bedtime procrastination, which does not support its behavioral intention role in TST proposed by Hall and Fong (2007). Dynamic inconsistency, which may be a result of excessive optimism about the future (Breig, Gibson, & Shrader, 2020), can complicate the relationship between time perspective and behavioral intention (Gaurav, 2021). This dynamic inconsistency is also known as "time-inconsistent preferences", which contradicts behavior selection at different time points with inconsistent time perspective, thus reducing the statistical power and significance of FTP in predicting bedtime procrastination.

Several limitations need to be addressed in this current study. Firstly, this study has a low sample size. Thus, the findings of this study have to be interpreted with caution as low sample size might affect the generalisability of the findings.

Another limitation is that the levels of bedtime procrastination during the weekdays and weekend were not examined separately as the data were collected cross-sectionally. It is possible that the level of bedtime procrastination could change over the course of the week.

Another methodological limitation is the unidimensionality of the ZTPI future subscale (Zimbardo & Boyd, 1999) used in this study. Despite being well-validated

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across various countries, it may have neglected components of FTP such as affect, cognition, and behavioral intention (Andre et al., 2018), as well as the ability to identify domain-related FTP which varies across individuals (e.g., one's FTP for health-related outcomes would be low despite the high FTP for work- and academic-related outcomes; Andre et al., 2018; Murphy, Cadogan, & Dockray, 2020); given that the available multidimensional FTP scales are with little to no evidence of psychometric properties in the Malaysian context (Brothers, Chui, Diehl, & Pruchno, 2014) and the young adult context (i.e., old adults; Kozik, Drewelies, Düzel, Demuth, Steinhagen-Thiessen, Gerstorf, & Hoppmann, 2020).

There are several recommendations for future researchers to conduct similar studies to advance the body of knowledge on this topic. Firstly, future researchers are recommended to use longitudinal research design to identify whether there are changes in the dependent variable (i.e., bedtime procrastination) when there are changes in independent variables (i.e., self-control, chronotype, and FTP) over a period of time (Caruana, Roman, Hernández-Sánchez, & Solli, 2015). Future longitudinal studies could assess the data collected from the participants differentially across weekdays and weekends. Besides, the findings that FTP is a non-significant predictor and the low variance of the current model in explaining bedtime procrastination suggest the need for future studies to discover other potential variables in predicting bedtime procrastination to improve the model.

In addition, future researchers can use more objective measures (e.g., measuring motor activity, cortisol levels, or skin temperature) in measuring chronotype, such as using ambulatory circadian monitoring (ACM) sensors (Martinez-Nicolas, Martinez-Madrid, Almaida-Pagan, Bonmati-Carrion, Madrid, & Rol, 2019; Ortiz-Tudela, Martinez-Nicolas, Campos, Rol, & Madrid, 2010) or actigraph (Gershon et al., 2017; Schneider, Fárková, & Bakštein, 2022); as well as a more detailed measure to assess bedtime procrastination, such as the sleep diary to record intended and actual bedtime every night (Mazza, Bastuji, & Rey, 2020), considering that subjective and retrospective self-report questionnaires might detract (i.e., underestimate or overestimate; Mazza et al., 2020) the accuracy of response.

The current research has shed some light on the concept of bedtime procrastination, raising awareness regarding the phenomenon among Malaysian young adults as this phenomenon may still not be notable to Malaysians, in which they may engage in bedtime procrastination as their regular night-time routine without conceptualizing this behavior. The current research fills in the knowledge gaps for the local literature. These findings can serve as a baseline for future local researchers to study similar topics, to further consolidate the present findings, or further examine the possible reasons behind the insignificance of FTP as a predictor, and the role of self-control and chronotype in predicting bedtime procrastination among Malaysians.

As self-control was found to negatively predict bedtime procrastination, future researchers could investigate the possible self-regulatory strategies to assist Malaysian young adults to go to bed at their intended time. Practitioners, academic institutions, and companies are called upon to develop or enhance intervention programmes and training that involve self-regulatory strategies for Malaysian young adults to reduce bedtime procrastination.

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