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THE MENTAL HEALTH OF COLLEGE STUDENTS AND THE LEVEL OF ACADEMIC ACHIEVEMENT: KNOWLEDGE ABOUT PSYCHOLOGICAL WELL-BEING, SELF-CONTROL, AND COLLEGE LEARNING

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ABSTRACT

Objectives. This paper aimed to increase knowledge about the psychological well-being and self-control of students during their college years and the impact of these indicators on academic performance.
Sample and settings. The researchers developed and integrated a semester psychological elective course "Successful Learning". During this course, the students received theoretical information about planning, goal setting, self-discipline, and interaction with others and practiced the acquired knowledge in practical classes. Before and after the end of the course, they passed testing according to the questionnaires on psychological well-being (PWB, Gao and McLellan) and self-control (SC, Unger et al.). The Student's t-test was used for comparison.
Results. The findings showed that self-control and psychological well-being were amenable to improvement. The documented results of previous studies on the impact of self-control and psychological well-being on academic performance were confirmed by ANOVA.
Study limitations. A relatively small sample size and a wide age range of participants could affect the accuracy of the results. The absence of a control group makes it impossible to exclude the influence of external factors on the psychological well-being and self-control of participants.

key words:

positive health,
post-pandemic period,
PWB model,
self-control,
successful learning

INTRODUCTION

In the last fifteen years, higher education students suffer from increasing mental disorders associated with learning problems (Davis & Hadwin, 2021). According to The World Mental Health International College Student (WMH-ICS) Initiative, about 75% of all mental disorders begin at the age of 24 since this age accounts for a period of the life cycle, which is extremely sensitive to emotional problems (The World Mental Health, 2023). In the United States, about a third of students are prone to such psychopathologies as depression, anxiety, and suicidality (Lipson & Eisenberg, 2018). Earlier studies reported that difficult study assignments and term papers lead to problems with well-being, motivation, and cognition (Davis & Hadwin, 2021). Additional negative factors of studying at a higher education institution are financial difficulties, institutional structure, poor mentoring, and inconsistency of curricula with the modern demands and needs of students (Charles & Hadley, 2022). In addition, the risk of expulsion can also negatively affect mental health and well-being (Camara, 2003).

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According to the World Health Organization, mental health is a state of well-being that allows an individual to cope with stress, work productively, and contribute to social life. In the context of students' success/failure associated with college, an important factor in their mental health is psychological well-being. The quality of life, the actualization of human potential, and academic success and achievements depend on psychological well-being (Davis & Hadwin, 2021). Increased students' success in performing tasks, concentration, psychological well-being, and academic performance are seen as possible through self-control skills (Finkenauer et al., 2005; Friese & Hofmann, 2009; Ulas et al., 2015).

It is thanks to self-control that a person can give up bad habits, follow a diet or other necessary restrictions, and study and work steadily (Pala & Başıbüyük, 2023). To achieve a result in almost any business, it is necessary to concentrate and perform a series of consistent actions, which is ensured by self-control (Cherniss, 2001). Self-control refers to the ability to control spontaneous and automatic reactions, impulses, emotions, and desires through an effort of will (Gombert et al., 2020), which avoids unwanted behavior and activates desirable one (De Ridder et al., 2018). The positive effects of self-control include an increase in resistance to stress and the development of responsibility, purposefulness, analytical thinking skills, and decision-making (Bilgin, 2017; Pala & Başıbüyük, 2023).

Despite the strong relationship between mental health and academic performance, there is still a dearth of research investigating the impact of self-management on the academic performance and psychological well-being of college students. The COVID-19 pandemic has brought numerous works aimed at psychological well-being, self-control, and academic achievement in remote learning (García-Ros et al., 2023; Gong et al., 2021; Hagedorn et al., 2022; Holzer et al., 2021a, 2021b). But when quarantine measures are very relaxed and many universities have returned to full-time format, modern realities make new post-pandemic challenges. Returning to offline mode after a long flexible schedule and home environment is an additional stress for students, which also impairs psychological well-being (Schwartz et al., 2021). It is important to analyze this period in the relationships between academic performance, self-control, and psychological well-being. That is the focus of the current research.

College Students' Psychological Well-Being and Academic Performance

Previous papers about psychological well-being (PWB) of higher education students focused on: (1) the understanding of factors improving psychological well-being (Burris et al., 2009; Charles et al., 2022; Tay et al., 2022); (2) the influence of academic performance on psychological well-being (Ahmed et al., 2023; Lipson & Eisenberg, 2018; Topham & Moller, 2011; Trucchia et al., 2013; Turashvili & Japaridze, 2012), (3) the satisfaction of basic psychological needs during the transition to distance learning (Holzer et al., 2021a, 2021b).

Burris et al. (2009) discovered some of important stress factors that negatively affect PWB. Researchers studied demographic, individual, and behavioral predictors of psychological stress of higher education students. Thus, optimism and health values (physical activity, giving up bad habits) decreased stress and improved PWB. However, the number of sexual partners was negatively associated with stress and PWB (Burris et al., 2009). Tay et al. (2022) emphasized the importance of psychological knowledge about depression, anxiety, and psychological well-being among young people as a factor in improving PVB.

Topham and Moller (2011) focused on the well-being of British first-year students. The authors studied the relationship between initial well-being and academic performance at the end of the year. According to the results, there were no statistically significant correlations between initial well-being and academic performance at the end of the academic year.

Trucchia et al. (2013) studied the relationship between academic achievement, psychological well-being, and coping strategies in a sample of medical students. Students with normal/insufficient academic performance from the study of Trucchia et al. (2013) reported dissatisfaction with most aspects of their personality. On the contrary, students with high academic performance were satisfied with their lives. Academic performance, according to the findings of Trucchia et al. (2013), directly affects psychological well-being, a sense of satisfaction with achievements, and stress management abilities. Other researchers, Turashvili and Japaridze (2012), tested the hypothesis of the impact of social, political, and economic conditions and educational reforms on the mental health of students in Georgia. They reported that students with average or high academic performance had higher indices of well-being, life goals, and personal growth (Turashvili & Japaridze, 2012).

Lipson and Eisenberg (2018) established an association between mental health and academic outcomes in terms of self-efficacy, motivation, teacher expectations, and learning satisfaction. The results obtained by Lipson and Eisenberg (2018) demonstrate the importance of mental health for success at university. The authors confirmed that academic dissatisfaction causes mental health problems and intentions to drop out. Positive mental health was associated with academic satisfaction and perseverance (Lipson & Eisenberg, (2018).

Ahmed et al. (2023) investigated the relationship between the components of PWB (self-efficacy, emotional intelligence, and social intelligence), academic performance (student self-efficacy, engagement, and anxiety of social interaction), and materialism. The researchers revealed the negative influence of materialism on the components of PWB. They also found a strong positive relationship between the components of PWB and academic performance (Ahmed et al., 2023).

Holzer et al. (2021a, 2021b) used student samples from different countries and investigated the satisfaction of basic psychological needs associated with the university (autonomy, experiential competence, relatedness, according to Self-determination theory) in distance learning during the COVID-19 pandemic. According to Holzer et al. (2021a, 2021b), the strongest predictor of positive emotions is competence. Thus, most of the previous studies (Ahmed et al., 2023; Lipson & Eisenberg, 2018; Trucchia et al., 2013; Turashvili & Japaridze, 2012) to one degree or another, confirm the correlation between mental well-being and academic results. Nevertheless, they fail to address self-control as a predictor of academic performance on an equal footing with psychological well-being.

College Students' Self-Control and Academic Performance

Self-control (SC) is an individual trait, which in different people has a different intensity and depends on the situation: under different conditions, the same person can show both low and high self-control (Unger et al., 2016). In the psychological literature, self-control in an academic context is most often seen as a set of personality traits such as orderliness, dependability, grit, and the tendency to comply with social norms (Duckworth et al., 2019; Eisenberg et al., 2014; Park et al., 2017). The hallmarks of self-control are own initiative and the choice of a more valuable option in the long run (Duckworth et al., 2019). However, researchers acknowledge that self-control is

not the only predictor of academic performance (Charles et al., 2022). Motivation, family social status, and general intelligence are also important but self-control is distinguished by robustness and ubiquity across academic outcomes (Duckworth et al., 2019).

In addition, an issue is raised that prolonged demands for self-control cause depression and emotional burnout. The theoretical basis of this approach is the Limited Strength Model of Self-Control (Muraven & Baumeister, 2000). According to this model, individual acts of self-control are regulated by the power of self-control and this power is a resource that can be exhausted. If the exhaustion is prolonged, the person's well-being deteriorates (Gombert et al., 2020). This state is named ego depletion (Unger et al., 2016). Studies report that college and university students experience ego depletion and that their self-control suffers, their memory deteriorates, and anxiety occurs (Gissubel et al., 2018; Zou et al., 2016).

Ramos Salazar and Meador (2022) used self-control and self-determination theories as a mediator of mental well-being and successful learning. Association between self-monitoring, self-directed learning, and grade point average (GPA) has been reported (Ramos Salazar & Meador, 2022). The relationship between perseverance and self-directed learning as well as between perseverance and well-being was also noted (Ramos Salazar & Meador, 2022). Duckworth and Seligman (2005) investigated the effects of IQ and self-control on changes in scores on standardized achievement tests over the long term. Researchers report that self-control skills exceed IQ in predicting academic achievement (Duckworth & Seligman, 2005).

Job et al. (2015) tested the effect of a semester-long practice intervention to improve self-management on year-end GPA. Job et al. (2015) noted the long-term effects of self-monitoring practices on academic performance. Tangney et al. (2004) looked for deficiencies in overcontrol and did not identify them; on the contrary, they reported that low self-control led to a wide range of personal and interpersonal problems.

This study aims to answer the following questions:

RQ1: Can self-control and psychological well-being be developed?

RQ2: Does self-control affect academic performance?

RQ3: Does psychological well-being affect academic performance?

RQ4: How close is the correlation between psychological well-being and self-control variables?

The main goal of this work was to expand knowledge about the psychological well-being and self-control of students during their college years and the impact of these indicators on academic performance.

Theoretical Background

The theoretical background of this paper was the publications by Carol D. Ryff and her concept of PWB, which is closely related to human development and self-realization. In 1996, she and her co-author summed up the results of many years of development of a multidimensional model for positive psychological functioning (Ryff & Singer, 1996). Psychotherapeutic research by Ryff and Singer presents the 6 components of the model (self-acceptance, autonomy, environmental mastery, personal growth, positive relations, and purpose in life) with an emphasis on their theoretical and philosophical foundations.

Self-acceptance is self-esteem in the long term, which involves the awareness and acceptance of personal strengths and weaknesses. It is also a trait of self-actualization, optimal functioning, and maturity (Ryff & Singer, 1996).

Autonomy is self-determination, independence, and the regulation of behavior from within. A completely autonomous person has his/her system of values and does not need approval from the outside; he/she is free from collective delusions (Ryff & Singer, 1998).

Environmental mastery is the ability to choose or creatively change own environment through physical or mental activities throughout life. It implies the active participation of a person in the environment and mastering it (Ryff & Singer, 1996).

Personal growth is the ability to grow, develop, and expand inner potential. It implies flexibility, openness to new experiences, and self-realization (Ryff & Singer, 1996).

Positive relations are trusting relationships with others as well as the ability to make friends and love. Empathy, affection, and warm interpersonal relationships are the criterion of maturity (Ryff & Singer, 1996).

Purpose in life: according to Ryff and Singer (1996), mental health is not possible without purpose and meaning in life. Over time, the priorities change each other but the direction to move toward the goal remains.

In subsequent works, these components received a solid theoretical justification. Thus, self-acceptance was a modification of Roger's view of the fully functioning person, autonomy was based on Maslow's conception of self-actualization and Jung's formulation of individuation, personal growth was also based on Jung's individuation and Jahoba's mental health, environmental mastery was taken from Buhler's lifespan theory (Ryff & Singer, 1996, 1998). Personal growth was most of all associated with individual self-realization; it originates from Aristotle's eudaimonia – the idea of striving toward excellence based on one's unique potential (Ryff & Singer, 1998). Positive relations are one of Allport's criteria of maturity and correspond to adult developmental stage theories proposed by Erikson (Ryff & Singer, 1998). Purpose in life is closely related to Allport's conception of maturity (Ryff & Singer, 1996).

In 1998, Ryff and Singer argued for a clear definition of positive human health that went beyond the "absence/presence of disease" criterion. They argued that human health requires philosophical reflection, the body and mind of a person shape his/her well-being, and positive human health is best viewed as a multidimensional dynamic process and not a discrete goal (Ryff & Singer, 1998). It means that the main triggers for human well-being are the realization of intellectual, social, emotional, and physical capabilities. Goals in life, the quality of relationships with others, self-respect, and excellence are affirmed as the main components of human well-being (Ryff & Singer, 1998).

Ryff and Singer's factors of psychological well-being have something in common with Self-Determination Theory (SDT) with three basic needs: competence, autonomy, and relatedness. Figure 1 shows the correspondence of the main PWB constructs with the main SDT ones. Ryff and Singer's definitions of autonomy and positive relations correspond to autonomy and relatedness in the SDT model, while the other four constructs of Ryff and Singer's model (self-acceptance, environmental mastery, personal growth, and purpose in life) reflect the need for competence (Gao & McLellan, 2018).

SDT emphasizes the internal motivational tendencies of a person rather than the external control of his/her actions (Barszcz et al., 2023). Autonomy refers to ownership of decisions, connectedness refers to belonging and connection, and competence refers to a sense of success (Rosli & Saleh, 2023). SDT describes efforts that promote well-being rather than disrupt it. At the same time, SDT accepts differences between assessments in different families, social groups, and cultures (Ryan & Deci, 2001).

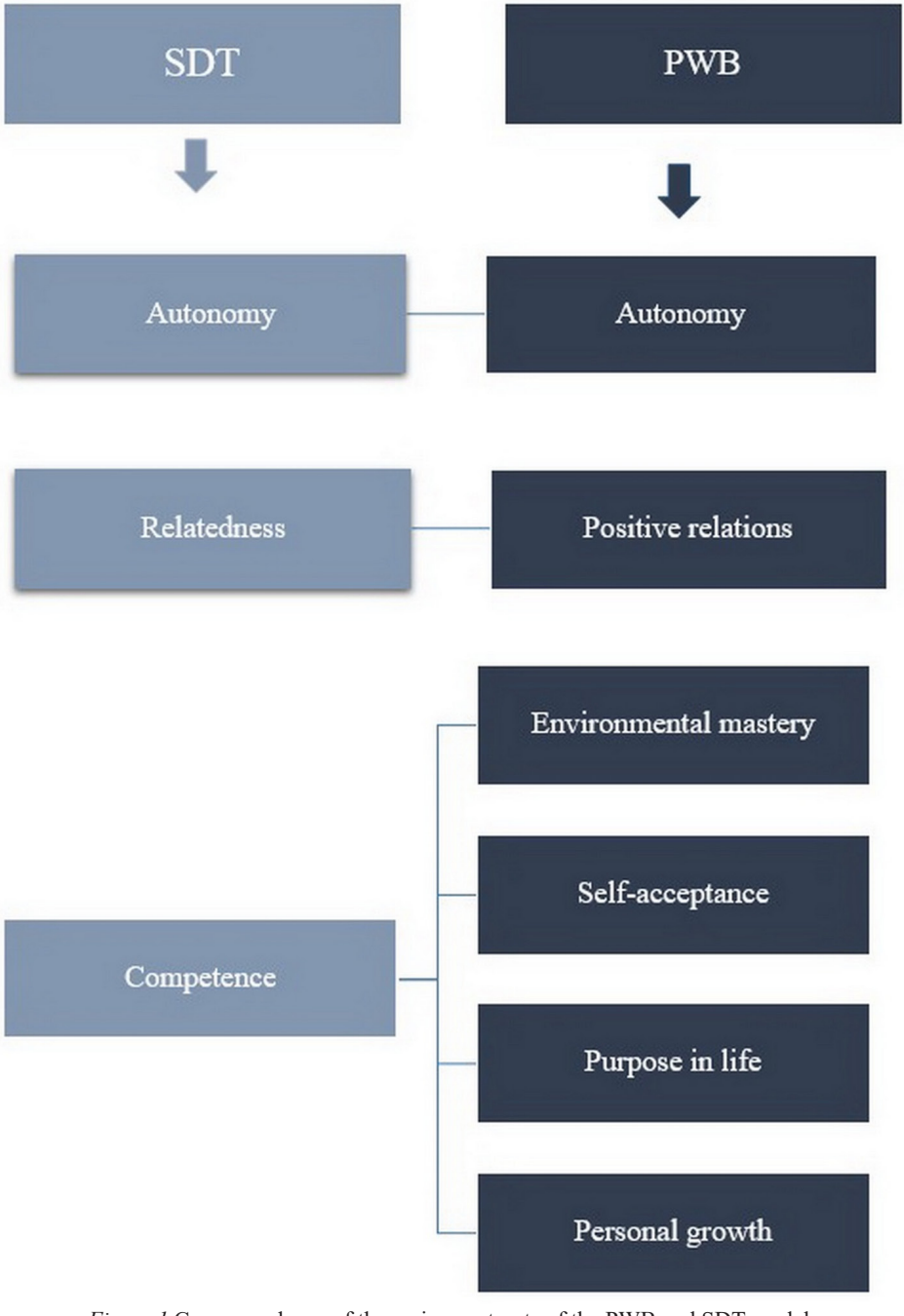

Figure 1 Correspondence of the main constructs of the PWB and SDT models

MATERIALS AND METHODS

Participants

The study site was Sichuan Business Vocational College, Chengdu, China. Third-year students were invited to attend an elective course during the second semester of the 2021/22 academic year. The course lasted 18 weeks (from February to May). Inclusion criteria: the age of 18 and above, the third year of college, at least 75% of class attendance, and at least 70% of completed tasks in a personal diary. It consisted of one theoretical lesson lasting 90 minutes and one practical training session per week. Before and after the end of the course, the students should pass tests on the scales of self-control and psychological well-being.

Thus, 248 people agreed to participate in the study; 11 people refused to participate during the study; 1 student refused to take the final test. In addition, 71 people were excluded due to missing classes or not filling out a personal diary. The final sample of the study was 165 students: 99 females (59%) and 86 males (41%). The age of the participants ranged from 18 to 27 years with a mean age of 18.4 years. The sample was homogeneous by race and ethnic composition.

Elective Course

The elective course "Successful Learning" combined the theory, research, and practice of strategic learning, motivation, and self-control. The main topics studied in the theoretical classes were: "Setting goals", "Effective planning", "Daily routine", "Basic psychological need satisfaction and positive emotion", "Impulsive actions", "Self-motivation", "Interaction with others", "Punctuality", and "Learning strategies". The practical classes continued the topic discussed in the theoretical lesson but they were very different in their duration. For example, after the first lecture "Setting goals" at a practical lesson, students were asked before each subsequent lesson to set a goal for the week and after the working week had passed and analyze how the main goal of the week was achieved. This had to be done in the personal diary of the "Successful Learning" course. It took no more than 15 minutes to set this task and discuss it with the students. The lesson "Daily routine" was held similarly: the students were given the task to write down the approximate daily routine in the diary every evening, and the next evening to mark with plus signs those points where they managed to comply with the schedule. The researchers noted that written exercises, notes, and self-analysis were very important for self-control (Job et al., 2015) so the elective course included such tasks in a personal diary. Only those students, who systematically filled out a personal diary, were enrolled in the study.

The literature has raised the question of the need for healthy activities to counteract anxiety and stress (Hanawi et al., 2020). In the study by Hanawi et al. (2020), almost 72% of respondents reported an unhealthy lifestyle, while the remaining 28% rated their lifestyle as intermediate. In addition, 51% of respondents experienced chronic stress, and 47% felt constant anxiety. Active participation in extracurricular activities on campus also positively affects the development of students, their sense of belonging to the college, and their psychological well-being. Thus, a paper by Winstone et al. (2022) indicated the positive connection of extraversion with belonging and well-being. The authors also reported that in the future, students regret missing opportunities to prove themselves in extracurricular activities. That is why team sports were also included in the practical part and small outdoor sports competitions were held twice.

Tools

Student PWB was measured using the Chinese version of the PWB questionnaire proposed by Gao and McLellan (2018). It is an adapted version of Ryff and Singer's questionnaire (1996, 1998). This questionnaire assesses six global dimensions of psychological well-being and personal growth: self-acceptance, autonomy, environmental mastery, personal growth, positive relations, and purpose in life. Each item was to be scored on a scale of 1 to 5 (1 = not at all; 5 = very much). The higher the score, the better the respondent has mastered this area in his/her life (Turashvili & Japaridze, 2012). The scale demonstrates acceptable to robust internal consistency; Cronbach's alpha was 0.84 for Self-acceptance, 0.71 for Autonomy, 0.92 for Environment mastery, 0.90 for Personal growth, 0.68 for Positive relations with others, and 0.93 for Purpose in life.

SC was measured using the scale created by Unger et al. (2016). Its English-language primary source was the scale by Tangney et al. back in 2004, where self-control was seen as a trait with individual differences and was an exhaustive resource (De Vries & Van Gelder, 2013). The SC scale (both the Chinese version and the original) consists of 36 items related to the general ability for self-discipline, non-impulsive action, healthy habits, work ethic, and reliability. They cover the four areas of self-control: emotions, thoughts, impulses, and actions. The Cronbach's alpha of the Chinese version was 0.89 for Self-discipline, 0.86 for Non-impulsive actions, 0.80 for Healthy habits, 0.78 for Work ethic, and 0.77 for Reliability. It was scored on a scale of 1 to 5 (1 = not at all; 5 = very much).

Academic performance was calculated as the student's grade point average across all academic disciplines for the 2021/22 academic year. It is the average result of all final grade points received during the exams. Before the intervention, the calculations involved the average grade points for the first semester exams. After the intervention, the calculation used data from the second semester. The results were divided into three levels of performance: high, middle, and low. To this end, a median split method was used. This method helped to find the median of a continuous variable. Values below the median comprised the "Low" category, while values above the median accounted for the "High" category.

Statistical Data Analysis

Pre-test and post-test scales were compared using Student's t-test (RQ1). One-way ANOVA (Analysis of Variance) ($P<0.05$) was used to answer research questions RQ2 and RQ3; post-test results and academic performance were compared. For the t-test, the magnitude of the effect was estimated using Cohen's d; the analysis of variance employed the η^2 indicator. The coefficient of correlation between the studied parameters was used for the RQ4 response; the calculation covered two periods. Statistical Package for the Social Sciences (SPSS 27) was used to process the results.

Ethical Issues

Ethical approval was granted by Sichuan Business Vocational College Research Ethics Committee before the commencement of the study (Protocol No. GR 21164069). All participants were of legal age and provided written consent. Personal information was not saved. There were no incentives or rewards.

RESULTS

RQ1: Can self-control and psychological well-being be developed?

Table 1 presents the descriptive statistics and results of the Student's t-test between the pre-test and post-test on the PWB scale. According to the t-test results, statistically significant differences between the self-reports of students before the start of the "Successful Learning" course and after its completion were observed for three of the 6 indicators: self-acceptance, personal growth, and purpose in life (Table 1). Effects Size: Self-acceptance: d = 1.221**,** Personal growth: d = 2.001, Purpose in life: d = 1.556 (Table 1).

It should be noted that all three indicators increased in the post-test. Two other indicators (autonomy and positive relations) did not have statistically significant progress. Only one indicator, environmental mastery, showed a non-significant post-test regression.

Table 1 The descriptive statistics and results of Student's t-test between the pre-test and post-test on the PWB scale

	Pre-test		Post-test			
PWB indicator	Mean	SD	Mean	SD	P-value	d
Self-acceptance	2.12	0.87	3.17	0.85	0.021*	1.221
Autonomy	2.01	0.89	2.29	0.81	0.246	0.329
Environmental mastery	2.52	0.94	2.47	0.72	0.611	-0.06
Personal growth	2.09	0.71	3.69	0.88	0.001*	2.001
Positive relations	2.40	0.83	2.60	0.76	0.24	0.251
Purpose in life	2.16	0.77	3.43	0.86	0.001*	1.556

*- significant difference ($P < 0.05$)

Thus, we can talk about the significant effect of the implemented course on developing a positive attitude towards oneself, recognizing own bad qualities on an equal footing with good ones (self-acceptance), openness to new ideas, expanding experience, realizing internal potential, marking personal progress (personal growth), purposefulness, and expansion of views that give meaning to activities (purpose in life).

Table 2 presents the descriptive statistics and results of the Student's t-test between the pre-test and post-test on the SC scale. The t-test showed statistically significant differences in two of the five constructs: progress in self-discipline and reliability with little changes in other indicators after the project completion (Table 2). Effects Size: Self-discipline: d = 1.488**,** Reliability d = 0.657 (Table 2).

RQ2: Does self-control affect academic performance?

Table 3 presents the ANOVA results for SC indicators according to the academic performance of students. Statistically significant differences are observed between students with different academic achievements for most indicators: self-discipline ($\eta^2 = 0.686$), work ethic ($\eta^2 = 0.702$), reliability ($\eta^2 = 0.856$), and, to a lesser extent, healthy habits ($\eta^2 = 0.184$) (Table 3). The only exception was non-impulsive actions ($\eta^2 = 0.011$) (Table 3).

Table 2 The descriptive statistics and results of Student's t-test between the pre-test and post-test on the SC scale

	Pre-test		Post-test			
SC indicator	Mean	SD	Mean	SD	P-value	d
Self-discipline	2.16	0.77	3.39	0.88	0.005*	1.488
Non-impulsive actions	2.58	0.82	2.66	0.85	0.336	0.096
Healthy habits	2.89	0.92	2.80	0.79	0.842	-0.105
Work ethic	2.25	0.84	2.76	0.74	0.121	0.544
Reliability	2.67	0.71	3.16	0.78	0.002*	0.657

*- significant difference ($P < 0.05$)

Table 3 ANOVA results, SC - Academic performance

	Academic performance				
SC indicator	Low	Middle	High	P-value	η^2
Self-discipline	2.98	3.39	3.80	0.001*	0.686
Non-impulsive actions	2.59	2.77	2.64	0.741	0.011
Healthy habits	2.29	2.85	3.26	0.044*	0.184
Work ethic	2.05	2.98	3.24	0.001*	0.702
Reliability	2.15	3.34	3.91	0.001*	0.856

*- significant difference ($P < 0.05$)

RQ3: Does psychological well-being affect academic performance?

Table 4 presents the ANOVA results for PWB indicators according to the academic performance of students. The students with higher academic performance demonstrated significant progress in self-acceptance ($\eta^2 = 0.629$) and purpose in life ($\eta^2 = 0.804$), as well as significant positive relations ($\eta^2 = 0.321$) and personal growth ($\eta^2 = 0.315$), and to a lesser extent environmental mastery ($\eta^2 = 0.196$).

Table 4 ANOVA results, PWB - Academic performance

	Academic performance				
PWB indicator	Low	Middle	High	P-value	η^2
Self-acceptance	2.89	3.16	3.45	0.001*	0.629
Autonomy	2.33	1.96	2.08	0.524	0.003
Environmental mastery	2.08	2.29	2.51	0.047*	0.196
Personal growth	3.44	3.75	3.89	0.026*	0.315
Positive relations	2.21	2.63	2.95	0.021*	0.321
Purpose in life	2.91	3.59	3.78	0.001*	0.804

*- significant difference ($P < 0.05$)

The only indicator that had the maximum value for students with low academic performance was autonomy. This indicator requires careful consideration in the context of a sample of Chinese students; this will be in the next section.

RQ4: How close is the correlation between psychological well-being and self-control variables?

Table 5 The correlation matrix of pre-test (lower triangle) and post-test variables (upper triangle)

		1	2	3	4	5	6	7	8	9	10	11
1	Self-acceptance	-	0.76	0.79	0.73	0.79	0.77	0.73	0.45	0.50	0.87	0.84
2	Autonomy	0.66	-	0.78	0.59	0.81	0.70	0.78	0.59	0.58	0.60	0.74
3	Environmental mastery	0.74	0.68	-	0.85	0.79	0.61	0.71	0.74	0.88	0.79	0.81
4	Personal growth	0.62	0.66	0.70	-	0.86	0.88	0.91	0.82	0.86	0.78	0.72
5	Positive relations	0.49	0.65	0.62	0.85	-	0.69	0.89	0.92	0.74	0.73	0.69
6	Purpose in life	0.77	0.73	0.87	0.92	0.66	-	0.85	0.70	0.67	0.74	0.74
7	Self-discipline	0.69	0.77	0.75	0.87	0.60	0.79	-	0.66	0.65	0.91	0.90
8	Non-impulsive actions	0.44	0.55	0.69	0.88	0.79	0.72	0.47	-	0.67	0.69	0.62
9	Healthy habits	0.52	0.49	0.87	0.79	0.65	0.66	0.59	0.49	-	0.60	0.58
10	Work ethic	0.84	0.63	0.84	0.77	0.57	0.71	0.62	0.57	0,59	-	0.81
11	Reliability	0.81	0.72	0.78	0.80	0.71	0.73	0.55	0.60	0.57	0.66	-

In general, there is a rather strong correlation between variables, especially in the post-test. In the pre-test, the weakest correlation was between Self-acceptance and Non-impulsive actions (r = 0.44); Self-discipline and Non-impulsive actions (r = 0.47); Autonomy and Non-impulsive actions (r = 0.47); Positive relations and Self-acceptance (r = 0.49) (Table 5). The strongest correlation of the pre-test was found between Purpose in life and Personal growth (r = 0.92); Non-impulsive actions and Personal growth (r = 0.88); Self-discipline and Personal growth (r = 0.87) (Table 5).

In the post-test, the least correlated indicators were Self-acceptance and Non-impulsive actions (r = 0.45); Self-acceptance and Healthy habits (r = 0.50). The strongest correlation was between Positive relations and Non-impulsive actions (r = 0.92), as well as between Self-discipline and such indicators as Personal growth (r = 0.91), Work ethic (r = 0.91), and Reliability (r = 0.90).

DISCUSSION

This study found that post-pandemic implementation of the psychology course "Successful Learning" contributed to the development of self-control and psychological well-being in college students (RQ1). The t-test results showed a large effect of interventions on the indicators of Self-acceptance, Personal growth, and Purpose in life on the PWB scale (Table 1), as well as on Self-discipline and Reliability on the SC scale (Table 2). This paper confirms the results of previous studies on the impact of self-control on academic performance (Job et al., 2015; Pala & Başıbüyük, 2023; Ulas et al., 2015) and psychological well-being on academic performance (Turash-

vili & Japaridze, 2012; Wei et al., 2021), which were RQ2 and RQ3. In general, the results of the study indicated at least a noticeable correlation between psychological well-being and self-control variables. The strongest relationship was found between Self-discipline and several variables (primarily Personal growth, Work ethic, and Reliability) in the post-test (RQ4).

In the study by Turashvili and Japaridze (2012), where the study sample consisted of Georgian students, high academic achievement corresponded to high psychological well-being such as clear life goals and personal growth. It should be noted that Georgians are representatives of a traditional society with strong family ties and in this, they are close to the Chinese people. But for Georgians, indicators of autonomy are leading, which is probably due to the peculiarities of the mentality. Turashvili and Japaridze (2012) explain that low family income, social security difficulties, and political instability have hardened the character of Georgian students: they are not prone to depression and systematically cope with everyday challenges. In this study, a sample of Chinese students had low autonomy scores in both the pre-test and post-test. This is not the only such result.

Gao and McLellan (2018) reported on the factor of internal conflicts regarding autonomy issues in the Chinese context. Firstly, Chinese society is collectivist (Zhang & Han, 2023): interaction and mutual assistance are highly valued but self-will and disobedience are considered vices (Gao & McLellan, 2018). Previous research reports the association of Chinese collectivism with strong social support and pro-social tendencies (Zhang & Han, 2023). Secondly, there are authoritative opinions (moral norms, mentor's words, and parent's opinion), which are not customary to give in to rethinking (Gao & McLellan, 2018). It is these reasons that can explain low indicators of autonomy.

Topham and Moller (2011) and Brockelman (2009) aimed to study distress and did not find a relationship between psychological well-being and the academic performance of students. This is probably due to approaches to measuring psychological well-being: they evaluated mental illness while the authors of this study continued the theory of positive psychological functioning (Ryff & Singer, 1996) and positive health that has gone beyond the absence/presence of diseases (Ryff & Singer, 1998). It is likely due the differences in the understanding of psychological health itself: the absence of illness or the understanding of mental-body positivity.

After the end of the course, there was a small effect on another PWB indicator, namely, Positive relations (Table 1). Sagone and De Caroli (2014) in their study report a correlation between anxiety and positive relations with others. It is worth noting that in this study, Positive relations correlated very closely with Non-impulsive actions and slightly less closely with Personal growth, and Autonomy (Table 5). Perhaps, for Chinese students, the implemented elective course was not effective in terms of developing skills for establishing positive relations. The reason might have been their low autonomy, as well as impulsivity, which the course did not manage to reduce.

Job et al. (2015) also observed positive effects of self-control after a semi-annual intervention. They hypothesized that the intervention motivated students to put more effort into their studies, which in turn significantly improved their academic performance. It has also been previously reported that students with high self-control had higher GPAs, reported less psychopathology, had higher self-esteem, were less likely to binge and abuse alcohol, and had better interpersonal skills and warmer trusting relationships with others. The current research did not show progress in healthy habits and work ethic. Most likely, the implemented course did not allow for fully working out these components of self-control and they remained at the same level in the post-test. Thus, students with low and middle academic performance showed middle SC, while

students with high academic performance demonstrated high SC. But other indicators testify to the success of the elective course. The authors hope that such courses will become a permanent practice in colleges and universities as their success determines not only academic results but also expands the competencies of future professionals.

For many decades, the academic responsibilities of students have not changed much (Duckworth et al., 2019) but they have expanded and changed dramatically over the past few years due to the introduction of technology and the transition to distance and/or hybrid learning. The situation is complicated not only by the expansion of tasks and opportunities but also by the habit of multitasking: at home, and not rarely in the classroom, in parallel with the performance of academic tasks, students are used to checking their accounts on social networks, chatting in instant messengers, watching videos, or listening to music (Duckworth et al., 2019). The desire to be distracted is the main motivation for such actions. But such multitasking usually distracts from the material and impairs learning. Duckworth et al. (2019) described an interesting experience: a survey among high school students regarding their most recent self-control experience found that the vast majority pointed to temptations unique to the modern age and related to digital devices. Students are forced to exercise self-control in order not to be distracted by a phone or tablet during academic work. In this paper, this issue was not fully addressed. Further research can focus on the study of self-control and screen addiction as one of the main modern challenges to successful learning.

Study limitations

One of the research limitations was the small sample size. In addition, the study did not concern the age of the participants, as well as other socio-demographic factors that could affect the accuracy of the results. In addition, the absence of a control group makes it impossible to exclude the influence of external factors on the psychological well-being and self-control of participants. Another limitation of the study is the broad scope of the course: it was too challenging to trace which topic could cause changes in students' behavior.

CONCLUSION

This research aimed to investigate the impact of self-management and psychological well-being on the academic performance of college students in the post-pandemic period. A course "Successful Learning" was developed and integrated to develop SC and PWB skills. The findings showed statistically significant progress in most PWB indicators and individual SC indicators after the end of the intervention. At the same time, the course failed to improve self-discipline and curb bad habits in students with low and middle academic performance. This is explained by the weakness of the implemented course to meet these objectives and further research is needed to develop these indicators in the long term. The findings of this study have implications for college educators and administrators, who are looking for ways to improve student academic achievement. The author's course needs to be improved in terms of self-control. However, in terms of psychological well-being, it justified itself and can be taken into consideration for further similar interventions.

A study on a narrow demographic group of college students suggests the usefulness of using self-control improvement courses to improve psychological well-being in college students. Acquisition of knowledges about self-control and psychological well-being and systematically practicing related skills can significantly improve students' well-being. Administrators and teachers can study the approaches used in the article and partially or completely transfer them into their teaching practices.

REFERENCES

Ahmed, M. A., Anwar-ul-Haq, M., Shafique, T., & Akram, B. (2023). Active mind, active learning: the role of materialism and psychological well-being for the determination of students'academic performance. *International Journal of Management in Education*, *17*(1), 44-67. https://doi.org/10.1504/ijmie.2023.127773

Barszcz, S. J., Oleszkowicz, A. M., Bąk, O., & Słowińska, A. M. (2023). The role of types of motivation, life goals, and beliefs in pro-environmental behavior: The Self-Determination Theory perspective. *Current Psychology*, *42*(21), pp. 17789-17804. https://doi.org/10.1007/s12144-022-02995-2

Bilgin, M. (2017). Ergenlerin beş faktör kişilik özelliği ile bilişsel esneklik ilişkisi. *Elektronik Sosyal Bilimler Dergisi*, *16*(62), 945-954. https://doi.org/10.17755/esosder.285296

Brockelman, K. F. (2009). The interrelationship of self-determination, mental illness, and grades among university students. *Journal of College Student Development*, *50*(3), 271-286. https://doi.org/10.1353/csd.0.0068

Burris, J. L., Brechting, E. H., Salsman, J., & Carlson, C. R. (2009). Factors associated with the psychological well-being and distress of university students. *Journal of American College Health*, *57*(5), 536-544. https://doi.org/10.3200/JACH.57.5.536-544

Camara, W. J. (2003). *College persistence, graduation, and remediation. Research summary. RS-09.* College Entrance Examination Board.

Charles, M., & Hadley, G. (2022). Autonomous corpus use by graduate students: A long-term trend study (2009–2017). *Journal of English for Academic Purposes*, *56*, 101095. https://doi.org/10.1016/j.jeap.2022.101095

Charles, S. T., Karnaze, M. M., & Leslie, F. M. (2022). Positive factors related to graduate student mental health. *Journal of American College Health*, *70*(6), 1858-1866. https://doi.org/10.1080/07448481.2020.1841207

Cherniss, C. (2001). Emotional intelligence and organizational effectiveness. In C. Cherniss, & D. Goleman (Eds.), *The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations* (pp. 1-12). John Wiley & Sons.

Davis, S. K., & Hadwin, A. F. (2021). Exploring differences in psychological well-being and self-regulated learning in university student success. *Frontline Learning Research*, *9*(1), 30-43. https://doi.org/10.14786/flr.v9i1.581

De Ridder, D. T., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2018). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. In R. Baumeister (Ed.), *Self-regulation and self-control* (pp. 213-255). Routledge. https://doi.org/10.4324/9781315175775-6

De Vries, R. E., & Van Gelder, J. L. (2013). Tales of two self-control scales: Relations with Five-Factor and HEXACO traits. *Personality and Individual Differences*, *54*(6), 756-760. https://doi.org/10.1016/j.paid.2012.12.023

Duckworth, A. L., & Seligman, M. E. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, *16*(12), 939-944. https://doi.org/10.1111/j.1467-9280.2005.01641.x

Duckworth, A. L., Taxer, J. L., Eskreis-Winkler, L., Galla, B. M., & Gross, J. J. (2019). Self-control and academic achievement. *Annual Review of Psychology*, *70*(1), 373-399. https://doi.org/10.1146/annurev-psych-010418-103230

Eisenberg, N., Duckworth, A. L., Spinrad, T. L., & Valiente, C. (2014). Conscientiousness: Origins in childhood? *Developmental Psychology*, *50*(5), 1331-1349. https://doi.org/10.1037/a0030977

Finkenauer, C., Engels, R., & Baumeister, R. (2005). Parenting behaviour and adolescent behavioural and emotional problems: The role of self-control. *International Journal of Behavioral Development*, *29*(1), 58-69. https://doi.org/10.1080/01650250444000333

Friese, M., & Hofmann, W. (2009). Control me or I will control you: Impulses, trait self-control, and the guidance of behavior. *Journal of Research in Personality*, *43*(5), 795-805. https://doi.org/10.1016/j.jrp.2009.07.004

Gao, J., & McLellan, R. (2018). Using Ryff's scales of psychological well-being in adolescents in mainland China. *BMC Psychology*, *6*(1), 17. https://doi.org/10.1186/s40359-018-0231-6

García-Ros, R., Pérez-González, F., Tomás, J. M., & Sancho, P. (2023). Effects of self-regulated learning and procrastination on academic stress, subjective well-being, and academic achievement in secondary education. *Current Psychology*, *42*, 26602-26616. https://doi.org/10.1007/s12144-022-03759-8

Gissubel, K., Beiramar, A., & Freire, T. (2018). The ego depletion effect on undergraduate university students: A systematic review. *Motivation and Emotion*, *42*(3), 334-347. https://doi.org/10.1007/s11031-018-9686-2

Gombert, L., Rivkin, W., & Schmidt, K. H. (2020). Indirect effects of daily self-control demands on subjective vitality via ego depletion: How daily psychological detachment

pays off. *Applied Psychology*, *69*(2), 325-350. https://doi.org/10.1111/apps.12172
Gong, Y., Zhang, L., & Sun, Y. (2021). More than just a mental stressor: psychological value of social distancing in COVID-19 mitigation through increased risk perception – A preliminary study in China. *Humanities and Social Sciences Communications*, *8*(1), 98. https://doi.org/10.1057/s41599-021-00774-1
Hagedorn, R. L., Wattick, R. A., & Olfert, M. D. (2022). "My entire world stopped": college students' psychosocial and academic frustrations during the COVID-19 pandemic. *Applied Research in Quality of Life*, *17*(2), 1069-1090. https://doi.org/10.1007/s11482-021-09948-0
Hanawi, S. A., Saat, N. Z. M., Zulkafly, M., Hazlenah, H., Taibukahn, N. H., Yoganathan, D., Abdul Rahim, N. N., Mohd Bashid, N. A. A., Abdul Aziz, F. A., & Low, F. J. (2020). Impact of a healthy lifestyle on the psychological well-being of university students. *International Journal of Pharmaceutical Research & Allied Sciences*, *9*(2), 1-7.
Holzer, J., Lüftenegger, M., Käser, U., Korlat, S., Pelikan, E., Schultze-Krumbholz, A., Spiel, C., Wachs, S., & Schober, B. (2021a). Students' basic needs and well-being during the COVID-19 pandemic: A two-country study of basic psychological need satisfaction, intrinsic learning motivation, positive emotion and the moderating role of self-regulated learning. *International Journal of Psychology*, *56*(6), 843-852. https://doi.org/10.1002/ijop.12763
Holzer, J., Lüftenegger, M., Korlat, S., Pelikan, E., Salmela-Aro, K., Spiel, C., & Schober, B. (2021b). Higher education in times of COVID-19: University students' basic need satisfaction, self-regulated learning, and well-being. *Aera Open*, *7*, 23328584211003164. https://doi.org/10.1177/23328584211003164
Job, V., Friese, M., & Bernecker, K. (2015). Effects of practicing self-control on academic performance. *Motivation Science*, *1*(4), 219-232. https://doi.org/10.1037/mot0000024
Lipson, S. K., & Eisenberg, D. (2018). Mental health and academic attitudes and expectations in university populations: results from the healthy minds study. *Journal of Mental Health*, *27*(3), 205-213. https://doi.org/10.1080/09638237.2017.1417567
Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, *126*(2), 247-259. https://doi.org/10.1037/0033-2909.126.2.247
Pala, Ş. M., & Başıbüyük, A. (2023). The predictive effect of digital literacy, self-control and motivation on the academic achievement in the science, technology and society learning area. *Technology, Knowledge and Learning*, *28,* 369-385. https://doi.org/10.1007/s10758-021-09538-x
Park, D., Tsukayama, E., Goodwin, G. P., Patrick, S., & Duckworth, A. L. (2017). A tripartite taxonomy of character: Evidence for intrapersonal, interpersonal, and intellectual competencies in children. *Contemporary Educational Psychology*, *48*, 16-27. https://doi.org/10.1016/j.cedpsych.2016.08.001
Ramos Salazar, L., & Meador, A. (2022). College students' grit, autonomous learning, and well-being: Self-control as a mediator. *Psychology in the Schools*, *60*(1), 53-77. https://doi.org/10.1002/pits.22760
Rosli, M. S., & Saleh, N. S. (2023). Technology enhanced learning acceptance among university students during Covid-19: Integrating the full spectrum of self-determination theory and self-efficacy into the technology acceptance model. *Current Psychology*, *42*, 18212-18231. https://doi.org/10.1007/s12144-022-02996-1
Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141-166. https://doi.org/10.1146/annurev.psych.52.1.141
Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics*, *65*(1), 14-23. https://doi.org/10.1159/000289026
Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, *9*(1), 1-28. https://doi.org/10.1207/s15327965pli0901_1
Sagone, E., & De Caroli, M. E. (2014). Relationships between psychological well-being and resilience in middle and late adolescents. *Procedia-Social and Behavioral Sciences*, *141*, 881-887. https://doi.org/10.1016/j.sbspro.2014.05.154
Schwartz, K. D., Exner-Cortens, D., McMorris, C. A., Makarenko, E., Arnold, P., Van Bavel, M., Williams, S., & Canfield, R. (2021). COVID-19 and student well-being: Stress and mental health during return-to-school. *Canadian Journal of School Psychology*, *36*(2), 166-185. https://doi.org/10.1177/08295735211001653
Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271-324. https://doi.org/10.1111/j.0022-3506.2004.00263.x
Tay, J. L., Goh, Y. S. S., Sim, K., & Klainin-Yobas, P. (2022). Impact of the HOPE inter-

vention on mental health literacy, Psychological well-being and stress levels amongst university undergraduates: A randomised controlled trial. *International Journal of Environmental Research and Public Health*, *19*(15), 9772. https://doi.org/10.3390/ijerph19159772

The World Mental Health (2023). *The WHO World Mental Health International College Student (WMH-ICS) Initiative.* https://www.hcp.med.harvard.edu/wmh/college_student_survey.php

Topham, P., & Moller, N. (2011). New students' psychological well-being and its relation to first year academic performance in a UK university. *Counselling and Psychotherapy Research*, *11*(3), 196-203. https://doi.org/10.1080/14733145.2010.519043

Trucchia, S. M., Lucchese, M. S., Enders, J. E., & Fernández, A. R. (2013). Relationship between academic performance, psychological well-being, and coping strategies in medical students. *Revista de la Facultad de Ciencias Médicas*, *70*(3), 144-152.

Turashvili, T., & Japaridze, M. (2012). Psychological well-being and its relation to academic performance of students in Georgian context. *Problems of Education in the 21st Century*, *49*, 73-80. https://doi.org/10.33225/pec/12.49.73

Ulas, A. H., Epcacan, C., Sokmen, Y., & Yasul, A. F. (2015). Relationship among pre-service primary teachers' level of self control skills and metacognitive awareness skills. *Journal of Language and Literature Education*, *15,* 134-149. https://doi.org/10.12973/jlle.11.290

Unger, A., Bi, C., Xiao, Y. Y., & Ybarra, O. (2016). The revising of the Tangney Self-control Scale for Chinese students. *PsyCh Journal*, *5*(2), 101-116. https://doi.org/10.1002/pchj.128

Wei, H., Dorn, A., Hutto, H., Webb Corbett, R., Haberstroh, A., & Larson, K. (2021). Impacts of nursing student burnout on psychological well-being and academic achievement. *Journal of Nursing Education*, *60*(7), 369-376. https://doi.org/10.3928/01484834-20210616-02

Winstone, N., Balloo, K., Gravett, K., Jacobs, D., & Keen, H. (2022). Who stands to benefit? Wellbeing, belonging and challenges to equity in engagement in extra-curricular activities at university. *Active Learning in Higher Education*, *23*(2), 81-96. https://doi.org/10.1177/1469787420908209

Zhang, J., & Han, T. (2023). Individualism and collectivism orientation and the correlates among Chinese college students. *Current Psychology*, *42*, 3811-3821. https://doi.org/10.1007/s12144-021-01735-2

Zou, Z., Liu, Y., Xie, J., & Huang, X. (2016). Aerobic exercise as a potential way to improve self-control after ego-depletion in healthy female college students. *Frontiers in Psychology*, *7*, 501. https://doi.org/10.3389/fpsyg.2016.00501