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RELATIONSHIP BETWEEN PERSONALITY TRAITS AND THE INNER STRENGTHS

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SUMMARY

Background: Zuckerman-Kuhlman-Aluja Personality questionnaire (ZKA-PQ) measures five psychobiologically based personality factors (activity, aggression, extraversion, neuroticism, and sensation seeking). The inner strength (from the ten perfections based on Theravada Buddhism) deems positive character, which includes truthfulness, perseverance, wisdom, generosity, morality (five precepts), mindfulness and meditation, patience and endurance, equanimity, determination, and loving kindness measured by the strength-based inventory (SBI). Our aim was to unfold the relationship between ZKA factors and SBI.

Methods: 642 Thai (age mean = 28.27, SD = 10.61) individuals (males 26.2%, females 73.8%) filled out our questionnaire battery: (1) Zuckerman-Kuhlman-Aluja Personality questionnaire - 200 items, 20 facets, five factors: Aggressiveness, Sensation Seeking, Activity, Extraversion, Neuroticism. (Cronbach alphas: 0.88, 0.81, 0.83, 0.89, 0.91 for AG, SS, AC, EX, NEU, respectively). (2) Strength-based inventory - 10 items, measuring 10 inner strength (Cronbach alpha: 0.68). Pearson correlation, neural network modelling and person-oriented methodology (model-based clustering) were conducted for analysis.

Results: Our correlational results revealed that inner strengths are negatively related to Aggression ($r=-0.44^{**}$), Neuroticism ($r=-0.43^{**}$), Sensation seeking ($r=-0.16^{**}$), whereas positively related to Extraversion ($r=0.37^{**}$) and Activity ($r=0.24^{**}$). Highest correlations were found between AG and patience (-0.43^{**}) and NEU and perseverance ($r=-0.40^{**}$), both with negative sign.

According to neural network modelling Activity was most related to Perseverance, Aggression to lack of Patience, Neuroticism to lack of Perseverance and Equanimity, Sensation Seeking to lack of Morality. Extraversion was most weakly related to inner strengths, but it was related to all other personality dimensions.

Model based clustering revealed four typical personality profiles: resilient (41.8%), extraverted undercontrollers (29.0%), introverted undercontrollers (10.6%) and overcontrolled (18.6%). Results showed that resilient had highest inner strength levels, whereas overcontrolled ones had the lowest.

Conclusion: Negative traits are, as expected, conversely related with strength, while positive traits (extraversion and activity) are positively related with strength. Our results confirm that resilient personality pattern can be linked to the inner strengths measured by SBI scale, which was based on 10 Buddhist perfections. Further results should be addressed how increase in inner strength can be related to changes in biologically based personality dimensions towards the resilient pattern.

Key words: inner strengths – Buddhism – personality - positive character - ZKA-PQ

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INTRODUCTION

Previous researches have clearly shown that positive virtues or character strengths are related to a number of positive psychological outcomes, including mental health, well-being (Wagner et al. 2020), better academic performance (Kern & Bowling 2015) and higher job-satisfaction (Harzer & Ruch 2015). Also, virtues and inner strengths were related to clinical outcomes, such as less clinical symptoms, lower probability of personality disorders (Wongpakaran et al. 2020) and lower level of stress (Harzer & Ruch 2015).

Less research have focused on how basic personality dimensions – such as big five or alternative big five factors – are related to character strengths. Noronha & Campos (2018) have found that Vitality,

Gratitude, Persistence, Spirituality, Kindness, Humor, Social Intelligence, Citizenship, Fairness and Creativity were related to higher Extraversion and Agreeableness along with lower Neuroticism. Cosentino (2017) found all big five traits to be significantly linked to character strengths listed by Peterson and Seligman (2004). Factors of character strengths (Erudition, Peace, Cheerfulness, Honesty, Tenacity) were all linked positively to extraversion, agreeableness, openness and conscientiousness and negatively to neuroticism.

The relatively low number of research between personality and character / inner strength might be traced to Gordon Allport's definition of personality: "Personality is character devaluated" (Allport 1937, p. 52). Given that basic personality dimensions are

supposed to be biologically determined, culture-free dimensions (Aluja et al. 2010), personality psychologist working on the culture-free factors were not interested in studying culture- and religion-specific virtues and strengths. Yet, Parrish & Linder-VanBerschot (2010) have pointed out that human nature, culture and personality are all influencing sources of thought and behavior and are all in interaction with each other. Also, many indigenous psychologists emphasize that psychological research should be based on indigenous realities such as native values, concepts, belief system (Hwang 2013). Hwang (2013) therefore states that scientific psychology can and should learn from the teachings of Confucianism, Taoism, Buddhism. These three religious traditions share some principles with regards to self-cultivation: they all highly value collective welfare, self-control, diligence, and rigorous self-cultivation (Lu et al. 2001). In this approach, not the determinants but the ways to cultivate personality are emphasized, including teachings with regards to one's virtues, to one's personal ethical excellence and perfection by own efforts. All these teachings about virtues are characteristics of not only Asian philosophies. Christianity, which is the leading religion in Western countries, places huge emphasis on similar human virtues, as Confucius, Buddha or Lao-Tze did (Dahlsgaard et al. 2005). Dahlsgaard et al. (2005) point out that the Seven Heavenly Virtues described in Aquinas's (1224–1274) *Summa Theologiae* are regarded as the classic Christian human strengths: temperance, courage, justice, and wisdom along with the three theological virtues listed by St. Paul: faith, hope, and charity (or love).

Dahlsgaard et al. (2005) pointed that there are 'universal' virtues/values that appear in all religious traditions: „there is convergence across time, place, and intellectual tradition about certain core virtues.” (p. 210). Dahlsgaard et al. (2005) have developed a classification system for these core traits (Courage: bravery, perseverance, and honesty; Justice: fairness, just leadership, trustworthiness and citizenship or teamwork; Humanity: love, graciousness, kindness; Temperance: forgiveness, humility, prudence, diligence, restraint and self-control; Wisdom: understanding, knowledge, creativity, curiosity, respect for instruction and providing counsel to others; Transcendence: gratitude, hope, fear-love of God and spirituality. All these virtues appearing in the different religions have been found similar to the ones revealed by Peterson and Seligman (Peterson & Seligman 2004) to be linked to high psychological well-being including positive mental health, self-actualization, psychosocial maturity, and authentic happiness.

In our study, we specifically focused on the ten “perfections” – positive psychological characteristics – of Theravada Buddhism (Buddhaghosa 2010) practices. The inner strength (from the ten perfections based on Theravada Buddhism) deems positive character,

which includes truthfulness, perseverance, wisdom, generosity, morality, mindfulness and meditation, patience and endurance, equanimity, determination, and loving kindness. Equanimity refers to psychological stability and undisturbance in any emotional, painful or other circumstances. The virtue of equanimity had already been emphasized by a number of ancient philosophies and major religions (Wongpakaran et al. 2021). These ten perfections have been applied to psychotherapy and named them “the inner strengths” by Wongpakaran & Wongpakaran (2013), which drive psychological change and adaptation (Wongpakaran & Wongpakaran 2013).

To our present knowledge and based on extensive search, no one has studied the link between the ten perfections of Theravada Buddhism (inner strengths) and the basic personality factors.

SUBJECTS AND METHODS

672 Thai (age mean = 28.27, SD = 10.61) individuals (males 26.2%, females 73.8%) filled out our questionnaire battery. 51.0% were below 26 yrs, 30.5% were aged between 26-35 and remaining 28.5% were aged above 35. 8.5% of respondents had maximum secondary level education, 49.0% were university students and 42.4% had university degree. 77.7% of participants were single.

Questionnaire battery included the (1) Zuckerman-Kuhlman-Aluja Personality questionnaire (ZKA-PQ, Aluja et al. 2010) and Strength-based inventory (SBI, Wongpakaran et al. 2020). The original ZKA-PQ was developed and validated simultaneously in English and Spanish (Castilian) by Aluja et al. (2010). This instrument contains five factors with four facets per factor: a) AG: Aggressiveness (AG1: Physical Aggression, AG2: Verbal Aggression, AG3: Anger, and AG4: Hostility); b) AC: Activity (AC1: Work Compulsion, AC2: General Activity, AC3: Restlessness, and AC4: Work Energy); c) EX: Extraversion (EX1: Positive Emotions, EX2: Social Warmth, EX3: Exhibitionism, and EX4: Sociability); d) NE: Neuroticism (NE1: Anxiety, NE2: Depression, NE3: Dependency, and NE4: Low Self-Esteem); and e) SS: Sensation Seeking (SS1: Thrill and Adventure Seeking, SS2: Experience Seeking, SS3: Disinhibition, and SS4: Boredom Susceptibility). Each facet is composed by ten items, making a 200-item instrument with a 4-point Likert-type response format (1, Disagree Strongly; 2, Disagree Somewhat; 3, Agree somewhat; 4, Agree Strongly). Approximately half of the items are reversed key scored. Alpha reliabilities were acceptable for both facets and factors in both versions of the instrument (Aluja et al. 2010). Cronbach alphas in our study revealed 0.88, 0.81, 0.83, 0.89, 0.91 values for AG, SS, AC, EX, NEU, respectively.

SBI consists of 10 items measuring 10 inner strengths (generosity, morality, mindfulness/meditation, wisdom, perseverance, patience and endurance, truthfulness, determination, loving kindness and equanimity) with multiple choice responses for each item. All 10 items showed a unidimensional construct with good fit statistics, good reliability and targeting (Wongpakaran et al. 2020). It had a Cronbach alpha of 0.68.

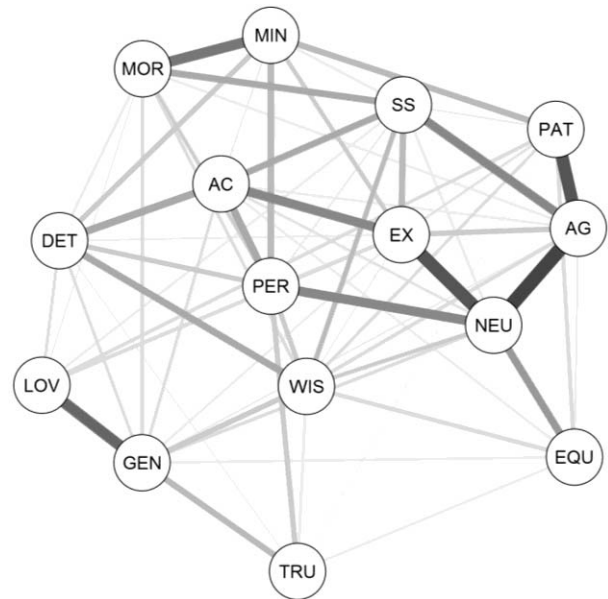
Pearson correlational analyses, neural network modelling were run in order to unfold relations between variables. In order to examine more holistic patterns, a person-oriented approach was applied to unfold the typical patterns. We applied model-based clustering (Fraley & Raftery 2013) on the personality factors and examined with ANOVA if personality clusters differed on SBI inner strengths items.

RESULTS

Our correlational results (see Table 1) revealed that inner strengths are negatively related to Aggression ($r=-0.44^{**}$), Neuroticism ($r=-0.43^{**}$), Sensation seeking ($r=-0.16^{**}$), whereas positively related to Extraversion ($r=0.37^{**}$) and Activity ($r=0.24^{**}$). Highest correlations were found between AG and patience (-0.43^{**}) and NEU and perseverance ($r=-0.40^{**}$), both with negative sign.

According to neural network modelling (see Figure 1). Activity was most related to Perseverance and Determination, Aggression to lack of Patience, Neuroticism to lack of Perseverance and Equanimity, Sensation Seeking to lack of Morality. Extraversion was most weakly related to inner strengths, but it was related to all other personality dimensions.

Model based clustering revealed four typical personality profiles (resilients: (41.8%), extraverted-undercontrollers (29.0%), introverted (10.6%) and overcontrolled (18.6%) Results (see Figure 2) showed that resilients had highest inner strength levels, whereas overcontrolled ones had the lowest.



Note: TRU: Truthfulness; PER: Perseverance; WIS: Wisdom; GEN: Generosity; MOR: Morality; MIN: Mindfulness; PAT: Patience; EQU: Equanimity; DET: Determination; LOV: Loving kindness; AG: Aggression; NEU: Neuroticism; SS: Sensation Seeking; EX: Extraversion; AC: Activity

Figure 1. Neural network model of relations between Inner Strengths (SBI) and Zuckerman-Kuhlman-Aluja Personality Factors

Table 2 presents ANOVA results of comparing clusters on inner strengths and personality factors. The personality clusters differed significantly from each other in all of inner strength, resilients scored significantly higher on all inner strength compared to at least one other cluster. Resilients scored significantly higher than extraverted-undercontrolled individuals in 9 out of the 10 items (only wisdom was not significant), than overcontrolled ones in 8 out of 10 items (truthfulness and generosity were not significant) and than introverted-undercontrolled ones in 3 out of 10 items (wisdom, morality and patience were significant).

Table 1. Pearson Correlations between Inner Strengths (SBI) and Zuckerman-Kuhlman-Aluja Personality Factors

	Aggression factor (AG)	Neuroticism factor (NEU)	Sensation Seeking factor (SS)	Extraversion factor (EX)	Activity factor (AC)
Truthfulness (TRU)	-0.11**	-0.12**	-0.05	0.09*	0.08*
Perseverance (PER)	-0.22**	-0.40**	-0.13**	0.29**	0.26**
Wisdom (WIS)	-0.34**	-0.35**	-0.22**	0.25**	0.10*
Generosity (GEN)	-0.17**	-0.07	-0.05	0.20**	0.14**
Morality (MOR)	-0.26**	-0.25**	-0.23**	0.17**	0.13**
Mindfulness (MIN)	-0.17**	-0.22**	0.00	0.22**	0.06
Patience (PAT)	-0.43**	-0.23**	-0.06	0.09*	0.02
Equanimity (EQU)	-0.28**	-0.34**	-0.07	0.20**	0.12**
Determination (DET)	-0.12**	-0.22**	-0.01	0.25**	0.28**
Loving kindness (LOV)	-0.12**	-0.08*	0.05	0.20**	0.04
SBI total	-0.44**	-0.43**	-0.16**	0.37**	0.24**

Note: * $p<0.05$; ** $p<0.01$

Table 2. Mean and standard deviation scores of Inner Strengths (SBI) and Zuckerman-Kuhlman-Aluja Personality Factors in the different model-based clusters, along with ANOVA results

	Resilient		Extraverted undercontrolled		Introverted		Overcontrolled		df	F	Sig	Eta ²
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
Truthfulness	3.50 _a	1.05	3.13 _b	1.13	3.52 _{a,b}	1.03	3.42 _{a,b}	1.28	3,668	4.64	0.00	2%
Perseverance	3.10 _a	0.87	2.57 _b	0.90	3.01 _a	0.93	2.32 _b	0.97	3,669	27.21	0.00	11%
Wisdom	3.87 _a	0.82	3.17 _b	1.04	3.39 _b	1.02	3.30 _b	1.11	3,670	23.12	0.00	9%
Generosity	3.90 _a	0.86	3.59 _b	1.04	4.01 _a	0.84	3.74 _{a,b}	1.07	3,671	5.63	0.00	2%
Morality	3.65 _a	0.89	3.14 _b	1.01	3.06 _b	0.97	3.07 _b	1.21	3,672	16.74	0.00	7%
Mindfulness (meditation)	2.24 _a	0.92	2.04 _a	1.02	2.00 _a	0.93	1.57 _b	0.78	3,673	15.20	0.00	6%
Patience	3.55 _a	0.98	3.12 _b	1.04	3.07 _b	1.18	3.20 _b	1.09	3,674	8.80	0.00	4%
Equanimity	3.98 _a	0.70	3.54 _b	0.93	3.72 _{a,b}	0.99	3.68 _b	0.94	3,675	11.04	0.00	5%
Determination	3.73 _a	0.93	3.31 _b	1.03	3.94 _a	1.00	3.26 _b	1.13	3,676	13.89	0.00	6%
Loving kindness	4.09 _a	1.02	3.70 _b	1.15	4.10 _{a,b}	1.07	3.74 _b	1.28	3,677	6.36	0.00	3%
Aggressiveness factor	1.88 _a	0.25	2.35 _{b,c}	0.19	2.40 _b	0.42	2.26 _c	0.41	3,678	132.02	0.00	37%
Neuroticism factor	1.94 _a	0.30	2.42 _b	0.20	2.42 _b	0.44	2.59 _c	0.40	3,679	162.44	0.00	42%
Sensation Seeking factor	2.08 _a	0.27	2.39 _b	0.17	2.63 _c	0.29	2.05 _a	0.33	3,680	133.26	0.00	37%
Extraversion factor	2.97 _a	0.25	2.58 _b	0.18	3.01 _a	0.31	2.32 _c	0.32	3,681	247.03	0.00	53%
Activity factor	2.59 _a	0.28	2.45 _b	0.20	3.09 _c	0.29	2.39 _b	0.39	3,682	105.20	0.00	32%

Note: Values in the same row and subtable not sharing the same subscript are significantly different at $p < 0.05$ in the two-sided test of equality for column means. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction

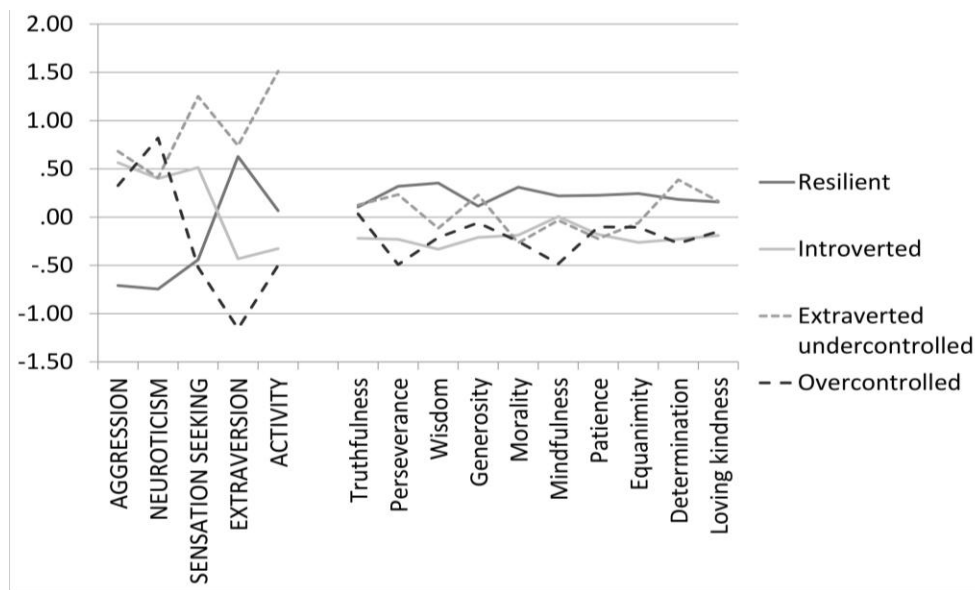


Figure 2. Four model-based clusters based on Inner Strengths (SBI) and Zuckerman-Kuhlman-Aluja Personality Factors

DISCUSSION

In line with previous researches, which have clearly shown that positive virtues or character strengths are related to a number of positive psychological outcomes (Wagner et al. 2020) as well as to less pathology in personality (Wongpakaran et al. 2020), we have found that inner strengths gained through Buddhist 10 perfection practices are linked to more resilient personality, particularly to higher extraversion and activity and lower aggression and neuroticism. These are also in line

with the results of Noronha & Campos (2018) and Co-sentino (2017) who found big five traits to be significantly linked to character strengths.

Although different religions share some teachings on cultivation of similar character strength (Dahls-gaard et al. 2005), our aim was to give a particular attention to inner strengths gained through ten “per-fections” – truthfulness, perseverance, wisdom, generosity, morality, mindfulness and meditation, patience and endurance, equanimity, determination, and loving kindness – of Theravada Buddhism (2010)

practices. To our present knowledge our results are the first on the link between these inner strengths and the psychobiologically based personality factors. The unfolded links are particularly interesting as the ten perfections are culture-specific and the psychobiological factors (aggression, extraversion, activity, sensation seeking and neuroticism) are regarded as culture-free dimensions of personality (see Aluja et al. 2010). Thus, our results do confirm the holistic-interactionist perspective of personality, which state that personality and individual functioning is a result of multi-determined, interdependent, reciproc, developing and integrated complex system of individual and environmental factors (Magnusson & Torestad 1993). Biologically based personality dimensions can have an impact on how culture-specific practices are applied, but also culture-specific practices can have an impact on the levels of different personality factors. Correlational research is not adequate to unfold the causal pathways, however it is exactly the reciprocity and interdependence which are emphasized by the holistic interactionist (Magnusson & Torestad 1993).

Our results confirmed that the resilient personality pattern is characterized by higher levels in different inner strengths, compared to all other personality patterns. Donnellan & Robins (2010) characterized resilient individuals as self-confident, emotionally stable ones who have a positive orientation toward others. Our results suggest that personality pattern of resilience has both biological and cultural determinants and Buddhist practices can mean a positive developmental influence on resilience. However, in order to unfold developmental aspects, additional longitudinal researches are needed.

CONCLUSION

Negative traits are, as expected, conversely related with inner strength, while positive traits (extraversion and activity) are positively related with those. Our results confirm that resilient personality pattern can be linked to the inner strengths measured by SBI scale, which was based on 10 Buddhist perfections. Further results should be addressed how increase in inner strength can be related to changes in biologically based personality dimensions towards the resilient pattern.

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Contribution of individual authors:

Zsuzsanna Kövi: preparation of article (first draft and final version), data analyses.

Tinakon Wongpakaran & Nahathai Wongpakaran: design of the study, data collection, review and approval of final version.

Pimolpun Kuntawong: design of the study. review and approval of final version.

Emöke Berghauer-Olasz: literature searches, writing introduction part, review and approval of final version.

Zsuzsanna Mirnics: literature searches, writing introduction and discussion part, review and approval of final version.

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