

Alternative Ways to Mental Health: Exploring Psychological Determinants of Preference for CAM Treatments



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Research suggests a trend toward an increased interest in CAM, complementary and alternative therapies for treating mental health problems, which is paralleled by a relatively favorable attitude of mental health professionals. This study explored psychological predictors of attitude toward CAM therapies: frustration tolerance (measured by the 28-item Frustration Discomfort Scale), self-esteem (measured by the 16-item Revised Version of the Self-Liking/Self-Competence Scale), cognitive styles (measured by REI Scale-short version) and irrational health beliefs (measured by CAM Health Belief Questionnaire – CHBQ). Participants ($N = 294$) reacted to vignettes describing Bach flower remedies and neuro-linguistic programming to indicate their attitude toward CAM. CAM health beliefs (e.g., belief that health is a balance of life forces) and self-esteem positively predicted attitude toward CAM, while the rational style of thinking was a negative predictor. As suggested by mediation analysis, the intuitive thinking style affected the attitude toward CAM via an increase in CAM beliefs. We discuss the implications of our findings for encouraging rational decision-making when seeking help with mental health problems.

Key words: attitude toward CAM, self-esteem, tolerance for frustrations, cognitive styles, mental health, irrational beliefs

The acronym CAM stands for the terms “complementary medicine” and “alternative medicine” which represent practices outside conventional medicine. The term “complementary” describes therapies that may be used alongside treatments offered by doctors (such as massage and meditation) whereas the term “alternative” describes approaches that are used instead of conventional ones

(such as herbal remedies) (WHO, 2019). According to practitioners, CAM modalities include a holistic approach to physical and mental health. They focus on the mind, body, and spirit or on the flow of energy through the body (Complementary and alternative therapies, 2021). Although CAM medical treatments have not undergone sufficient empirical scrutiny (WHO, 2019), research shows

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The supplementary material (the database and the instruments) is open via a sharing platform <https://mfr.osf.io/render?url=https%3A%2F%2Fosf.io%2Fg9ypu%2Fdownload>; <https://mfr.osf.io/render?url=https%3A%2F%2Fosf.io%2Fwfa52%2Fdownload>

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that 80% of the world's population uses some form of CAM (Milden & Stokols, 2004).

World Health Organization deems complementary and alternative medicine should play an important part in the provision of health services. However, they also recognize a need for a more thorough regulation of this domain and its better integration within the primary healthcare system (WHO, 2019). Some of the difficulties related to integrating CAM into conventional medicine are, for instance, lack of availability, insufficient evidence of CAM efficacy and high costs of CAM (Barett et al., 2004). The essential provision is sufficient scientific scrutiny to establish the effectiveness and safety of the various practices (WHO, 2019).

So far, the studies about preferences and usage of CAM have mainly focused on patients suffering from different medical illnesses, e.g. chronic pain conditions (Gureje, 2015). Thus, the field of alternative and complementary therapies for treating mental health problems is particularly under-researched and there are many unknowns about their efficacy, the factors which lead to preferring CAM to conventional psychotherapy or how they interact with conventional psychotherapy (Wapf & Busato, 2007). The efficacy of some types of CAM procedures for improving mental health outcomes has been empirically supported, e.g. for mindfulness-based interventions (Khoury et al., 2013) or wilderness therapy (Bettmann, Gillis, Speelman, Parry, & Case, 2016). However, many treatments have not been assessed, while some have been proven ineffective. For instance, a meta-analysis on the effectiveness of Bach Flower Remedies showed that these were no more effective than a placebo treatment for anxiety or ADHD; similarly, there was no evidence for its efficacy for the treatment of pain or, in fact, any psychological problem (Thaler et al., 2009).

Despite the variable empirical support, research suggests an increased interest of peo-

ple in CAM therapy for treating mental health problems (Tindle et al., 2005), paralleled by a favorable attitude of mental health professionals (Wilson & White, 2007). Some findings even indicate that the increasing popularity of CAM can be related to a reduced engagement in psychotherapy (Ducan & Miller, 2000).

The mixed results highlight the need for further exploration of psychological determinants of attitudes toward CAM in the field of mental health. Understanding the attractiveness of CAM and the psychological profile of its users is relevant for finding the best way to inform and educate the public and professionals about all the potential benefits and risks of using CAM.

Psychological Predictors of Attitudes toward Psychotherapy

Research suggests that the level of experienced distress, but also emotional openness (Komiya, Good, & Sherrod, 2000), (female) gender (Nam et al., 2010), level of education and culturally-based beliefs about the causes of mental health problems (Sheikh & Furnham, 2000) predict attitudes toward psychotherapy. One of the barriers regarding individual readiness to seek psychological help is also social stigma associated with mental health treatments and illness (Sibicky & Dovidio, 1986). Whether the same predictors are relevant for interest in CAM therapies remains to be seen. We therefore review previous research on general CAM preference as a treatment to somatic problems, to combine these insights in choosing our predictors.

When thinking about personal capacities relevant for these preferences, we applied the model of psychopathology offered by the Rational-emotive behavior therapy (REBT; Ellis, 1994; Ellis & Dryden, 2007). According to REBT, mental health and disorder can be related to consistent patterns of irrational

thinking and the two most basic categories of irrational beliefs are related to an unfavorable self-image and/or to low tolerance for frustration and discomfort (for empirical validation of the model, see Oltean, Hyland, Vallières, & David, 2017). Self-esteem has been shown to affect psychological and social domains of subjective quality of life (Kuehner & Bueger, 2005), while lower levels of self-esteem predict higher levels of internalized stigma (Eizenberg et al., 2013). This implies that higher self-esteem and higher frustration tolerance would be good indicators of the capacity of the individual to take on therapeutic work or intervention. Relying on these results, we considered it important to test whether levels of self-esteem and frustration tolerance could influence attitudes toward CAM therapies regarding problems with mental health.

The Role of Thinking Style and Irrational Beliefs in Attitudes Toward CAM

Previous research indicates that CAM users are in most cases persons with higher education (McFarland et al., 2002), higher income (Siriois, 2008), female rather than male (Molassiotis et al., 2005), middle-aged, and of poorer health status than non-consumers (Molassiotis et al., 2005). Also, lifestyles and values, as vegetarianism (Gianelli, Cuttini, Da Fre, & Buiatti, 2007) as well as spirituality (Fuller, 1989) have been shown to predict preference for CAM.

Specifically, the individual style of thinking and endorsement of irrational beliefs were shown to be relevant for attitudes toward CAM for somatic problems. According to dual-process models of cognition (Epstein & Pacini, 1999) there are two distinct and independent thinking styles: rational thinking and intuitive thinking style. Rational thinking is slow and leads to logical conclusions whereas intuitive thinking is fast, automatic and

unconscious. Studies using the Rational-Experiential Inventory as a self-report measure of thinking styles (Lindeman, 2011; Saher & Lindeman, 2005; Svedholm & Lindeman, 2012) reported positive association between intuitive style and support for CAM, the use of CAM (Von, 2014) and with CAM beliefs (Aarnio & Lindeman, 2004). It was also shown that some CAM users refer to intuition when asked to explain their CAM choice (Caspi, Koithan, & Criddle, 2004).

Research indicates that in addition to the general propensity for intuition, more specific beliefs related to health predict CAM preferences (Saher & Lindeman, 2005). For instance, magical health beliefs are defined as beliefs about health which follow the laws of magical thinking: the law of contagion, e.g. eating a diet that has 70% of water content because our bodies are 70% water (Diamond & Diamond, 1985) and the law of similarity, according to which superficial resemblance indicates deep resemblance (Vyse, 1997). For instance, it is believed that Reiki therapists can send healing energy to other people anywhere in the world (Saher & Lindeman, 2005). Similarly, ontological confusions represent a set of biases in knowledge about psychological, biological, and physical phenomena caused by categorical trespassing, e.g. anthropomorphism (Dio et al., 2018). One study shows that these ontological confusions explained additional variance in CAM beliefs (Lindeman, 2011).

Thus, previous research suggests that believing in CAM has common grounds with the more general category of paranormal beliefs (Grimmer & White, 1990; Saher & Lindeman, 2005; Sjöberg & af Wåhlberg, 2002), that is, belief in phenomena that disobey the laws of nature (Broad, 1953). In addition, results from a recent study show that people who had paranormal beliefs and experiences with paranormal practices (such as tarot cards or

fortune-telling) were also prone to CAM approval and use (Abheiden, Teut, & Berghöfer, 2020).

The reviewed findings refer to the usage of CAM for physical health problems. We wanted to explore whether the role of styles of thinking and irrational CAM health beliefs would extend to attitude toward CAM treatments for mental health. As CAM health beliefs are a class of the most relevant general beliefs about health and healing, which have been proved to affect the interest in medical CAM treatments (Lie & Boker, 2004) and given that they include the proposition that mind and body are inextricably related, we propose that their role will generalize to the domain of mental health.

The Present Study

In this study we wanted to explore the role of several predictors of attitude toward CAM treatments in the domain of mental health. We opted for several individual difference variables that we deemed relevant of attitude toward CAM based on their role in either attitude toward conventional psychotherapy or general CAM medical treatment: tolerance for frustration, self-esteem, and cognitive styles (rational and intuitive). We also examined the predictive role of CAM health beliefs, as a class of the most relevant general beliefs about health and healing, which have been proved to affect the interest in medical CAM treatments (Lie & Boker, 2004). Next, we wanted to examine the relationship between the attitude toward conventional psychotherapy and CAM treatments for mental health problems and whether the same predictors will be relevant for attitude toward CAM and attitudes to conventional psychotherapy. We recruited both participants working in helping professions (psychology, medicine, social work) and the general population. This

allowed us to make additional comparisons regarding attitudes towards CAM therapies between mental health professionals and others. Finally, we aimed to measure attitude toward CAM in an ecologically valid context, so we created vignettes that describe treatments based on information found on some CAM modalities' official websites.

We presented two of the popular CAM treatments: Bach flower remedies and neuro-linguistic programming (NLP). We opted for Bach remedies because of its frequent use as an alternative anxiety treatment, which however lacks evidence of effectiveness. For instance, a study showed that this remedy has a strong placebo effect but no other specific therapeutic effect over and above placebo (Walach, Rilling, & Engelke, 2001). Similarly, NLP was chosen because of its rising popularity despite insufficient empirical validation of its efficacy (Witkowski, 2010). Namely, in a meta-analytic study, Witkowski (2010) indicated that only 18.2% of the chosen studies showed results supporting the tenets of NLP, while 54.5% of them claimed non-supportive of the NLP tenets and 27.3% showed uncertain results.

Hypotheses

H1: people endorsing CAM health beliefs will also express more positive attitudes toward CAM treatments for mental health problems. This follows from the finding that people opt for CAM modalities because this reflects their ideologies, worldviews, beliefs, and philosophical orientations toward health and life (Astin, 1998). We propose that CAM health beliefs, for instance, that health is a matter of a general balance of forces and that a person heals spontaneously, will thus generalize to the issues of mental health. This assumption is consistent with how practitioners of alternative and complementary therapies actually

define their work, restoring the whole body's balance, which includes healing mental health problems (Complementary and alternative therapies, 2021).

H2: people with higher self-esteem are expected to express less positive attitudes to CAM therapies than those with low self-esteem. Since conventional psychotherapy typically entails self-scrutiny and re-evaluation of one's self-image, we expected that people with lower self-esteem would be more open to alternative approaches that either do not pose this type of strain or focus on promoting self-worth rather than developing self-criticism. We base this hypothesis on theoretical considerations (e.g., Ellis, 1994; Ellis & Dryden, 2007), since we are not aware of previous empirical tests of this idea.

H3: lower levels of frustration tolerance will relate to more positive attitudes toward CAM therapies. Since conventional psychotherapy demands time and commitment, we expected that people with lower frustration tolerance would be more inclined to try alternative approaches that appear less psychologically demanding, if they needed therapy. This argument is also theoretical (e.g., Ellis, 1994; Ellis & Dryden, 2007), since we are not aware of previous empirical tests of this idea.

H4: it was expected that higher levels of rational thinking would predict less positive attitudes toward CAM modalities. Conversely, a propensity to an intuitive cognitive style would predict more positive attitudes toward CAM. This assumption is based on the research indicating positive association between intuitive cognitive style and support for CAM (Lindeman, 2011; Saher & Lindeman, 2005; Svedholm & Lindeman, 2012), and correlation between intuitive thinking and the use of CAM (Von, 2014). Also, previous studies reveal a positive relation of the intuitive style with other forms of irrational beliefs, such as ESP beliefs (Branković, 2019).

Method

Participants

We aimed to recruit at least 211 participants, to be able to detect low correlations ($r = .20$) with a .90 power and the alpha level set at .05 (Faul, Erdfelder, Lang, & Buchner, 2007). Also, to test the differences in the attitudes of the community sample against the group of mental health professionals and students, the power analysis suggested that a moderate size effect with a desired power of .90 and with alpha level set at .05, should be obtained with 172 participants. As we disseminated the link for the online questionnaire through Facebook groups and Facebook advertisements, we recruited all the participants willing to respond within the set timeframe and included all completed questionnaires.

A total of 329 participants responded to the online questionnaire. A total of 294 participants completed the questionnaire, including a community subsample ($n = 147$) and a subsample of mental health professionals and psychology students from the Faculty of Media and Communications in Belgrade, Serbia ($n = 147$). The socio-demographic characteristics of the participants are shown in Table 1.

We can observe from the table that the subsamples are not ideally matched: the subsample of mental health students and professionals includes a higher percentage of female participants (85%) than the community sample (69.40%; $\chi^2(1) = 10.226, p < .001$). Likewise, community subsample attained a somewhat higher average education level ($M = 6.11, SD = 1.52$) compared to the mental health students and professionals ($M = 5.46, SD = 1.20; F(1,292) = 17.069, p < .01$), due to the high prevalence of students in the latter. Also, the mental health students and professionals subsample is on average younger

Table 1 *Socio-demographic characteristics of the participants*

	n_{helping}	%		n_{others}	%
<i>Gender</i>			<i>Gender</i>		
Female	125	85.00	Female	102	69.40
Male	22	15.00	Male	45	30.60
<i>Age</i>			<i>Age</i>		
18-30	121	82.30	18-30	62	42.20
31-50	23	15.70	31-50	59	40.10
Over 50	3	2.00	Over 50	26	17.70
<i>Education</i>			<i>Education</i>		
Elementary school	0	0.00	Elementary school	1	0.70
High School	8	5.40	High School	59	40.10
Undergraduate degree	118	80.20	Undergraduate degree	51	34.70
Master's Degree	15	10.20	Master's Degree	34	16.30
PhD Degree	6	4.10	PhD Degree	12	8.20

($M = 25.83$, $SD = 7.60$) than the community subsample ($M = 26.81$, $SD = 13.45$, $F(1,292) = 74.225$, $p < .01$). To account for this, we will include gender, age and education as covariates in the comparisons.

Prior to the recruitment, we obtained the approval of the Ethical Committee of the Faculty of Media and Communications, Singidunum University in Belgrade. Furthermore, participants gave their informed consent prior to participation. In the following section, we report on the analyses including all the measures obtained for the participants who completed the questionnaire; no further exclusions were made.

Instruments

The preference for cognitive styles was measured with *REI Scale – short version* (Pacini & Epstein, 1999). Participants expressed their agreement with statements on a 5-point Likert

scale-based, ranging from *Strongly Disagree* to *Strongly Agree*, e.g. *I am not a person with strong intuition. Or I enjoy intellectual challenges*. We calculated scores for rational (in the current study, $\alpha = .707$) and intuitive/experiential (in the current study, $\alpha = .763$) cognitive styles, higher scores indicating a higher preference for either rational or intuitive thinking styles. Following the authors of the original instrument, we will use the terms intuitive and experiential cognitive style interchangeably.

The level of self-esteem was measured with the *Revised Version of The Self-Liking/Self-Competence Scale (SLCS-R)* (Tafarodi & Swan, 2000). The SLCS-R is a 16-item, 5-point scale, ranging from *Strongly Disagree* to *Strongly Agree*. Higher scores represent higher levels of self-esteem (e.g., *I tend to devalue myself. Or I feel great about how I am*) (in the current study, $\alpha = .913$).

Frustration Discomfort Scale (Harrington, 2005) was used to measure tolerance for frus-

trations. It consists of 28 items with a 5-point scale attached. Higher score indicates lower tolerance for frustrations (e.g., *I can't stand the frustration when I don't realize my own goals. Or I can't stand the disturbing feelings*) (in the current study, $\alpha = .924$).

Attitudes toward conventional psychotherapy were measured with short form of *Attitudes toward Seeking Professional Psychological Help* (ATSPPH-SF) (Fischer & Farina, 1995). Ten items are rated on a 4-point Likert-type scale, from *Disagree* to *Agree*. Higher scores on the scale indicate more positive attitude toward asking for psychological help when needed (e.g., *People should solve their problems, so psychological counseling should be their last option. Or Personal and emotional problems, like most things in life, tend to resolve themselves*) (in the current study, $\alpha = .810$).

CAM Health Belief Questionnaire (CHBQ) (Lie & Boker, 2004) was used for CAM beliefs (Lie & Boker, 2004). The scale consisted of 10 items based on a 7-point scale, ranging from *Strongly Disagree* to *Strongly Agree*. Higher scores indicated a more positive attitude toward perceiving health as a matter of general balance of forces (e.g., *Complementary therapies are a threat to public health. Or Treatments not tested in a scientifically recognized manner should be discouraged*) (in the current study, $\alpha = .786$).

To establish the attitude toward CAM treatments, participants read two compounded vignettes presenting two CAM modalities chosen among those that have not received sufficient empirical support: Bach flower remedies (e.g., Ernst, 2010) and neuro-linguistic programming (NLP; Witkowski, 2010) (the vignettes are provided in Appendix 1 integrally). Each vignette was followed by three questions. Participants indicated the extent to which they would be willing to: 1) try the given treatment, 2) recommend it to friends, and 3) prefer it over conventional psychother-

apy. Participants indicated their response for each of the items on a scale ranging from 0 to 100%. Based on their responses, we calculated two scores of attitudes toward Bach flower remedies and toward NLP. Both mini-scales proved highly reliable ($\alpha_{bach} = .89$, $\alpha_{nlp} = .91$), as did a combined score averaged from the two measures ($\alpha = .91$).

Results

We will organize the presentation of the results in two sections: tests of the hypotheses (confirmatory analyses) and additional exploratory analyses not included in specific hypotheses.

Descriptive Statistics and Relationships between the Variables

In Table 2, we present descriptive statistics and the correlations among variables. As assumed, a more positive attitude towards CAM was related to higher scores on the CAM beliefs scale and higher experiential thinking style scores. Conversely, higher scores on the rational cognitive style were related to less positive attitudes toward CAM. More positive attitude toward conventional psychotherapy was related to less positive attitude toward CAM ($r = -.16$, $p < .001$), although this relationship was not very strong. The only unexpected correlation was between self-esteem and attitude to CAM. Contrary to our expectations, we recorded that a higher level of self-esteem was associated with a more positive attitude toward CAM modalities.

Testing the Hypotheses

Predictors of Preference for CAM Treatments

We tested the predictive power of the psychological determinants of attitude to CAM via hi-

Table 2 Descriptive statistics and correlations among variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Low tolerance for frustration	2.90	.66	1	-.28**	-.30**	.24**	-.12*	.15**	.08	.14**	.19**
2 Self-esteem	3.38	.72	-.28**	1	.26**	.11	-.17**	.13*	.12*	.12*	.10
3 REI rational	3.93	.70	-.30**	.26**	1	-.06	.09	-.07	-.18**	-.23**	-.14
4 REI experiential	3.73	.76	.24**	.11	-.06	1	-.09	.24**	.24**	.23**	.24**
5 Attitude towards CONVO	3.18	.41	-.12**	-.17**	.09	-.09	1	-.08	-.16**	-.19**	-.13**
6 Attitude towards CAM	4.40	1.08	.05	.13**	-.07	.24**	.08	1	.57**	.58**	.47*
7 CAM beliefs	38.26	27.78	.64*	.12*	-.18**	.24**	-.16**	.57**	1	.94**	.88**
8 Attitude towards BACH	35.40	29.38	.14**	.12*	-.23**	.23**	-.19**	.58**	.94**	1	.69**
9 Attitude to NLP	38.35	29.79	.19**	.10	-.14	-.24**	.13*	.47*	.88**	.69**	1

Note. REI – Rational Experiential Inventory; CONVO – conventional psychotherapy; CAM – Complementary and Alternative Medicine; NLP – Neuro-Linguistic Programming.

* correlation significant at level .05, ** correlation significant at level .01

Table 3 Hierarchical regression analysis of predictive power of the psychological determinants of attitude toward CAM and attitude toward conventional therapy

	Attitude toward CAM				Attitudes toward CONVO				
	<i>β</i>	<i>SE</i>	<i>p</i>	<i>R</i> ²	<i>β</i>	<i>SE</i>	<i>p</i>	<i>R</i> ²	<i>R</i> ²
Gender	.04	3.27	.306		.18	.05	.001		
Age	.01	.12	.834		-.29	.00	.000		
Education	-.04	1.04	.414		.07	.02	.247		
Low tolerance for frustrations	.07	2.28	.228		-.20	.04	.002		
Self-esteem	.14	2.08	.011		-.22	.03	.000		
REI rational	-.15	2.10	.005		.04	.04	.555		
REI experiential	.06	1.83	.201		-.07	.03	.213		
Attitudes toward CONVO	-.03	3.53	.539						
CAM beliefs	.52	1.28	.000		.01	.02	.871		
				.39				.19	.17

Note. REI – Rational Experiential Inventory; CONVO – conventional psychotherapy; CAM – Complementary and Alternative Medicine.

hierarchical regression analysis (Table 3): in the first step, we entered the socio-demographic variables (gender, age, and education), the second step added tolerance for frustrations, cognitive styles and self-esteem, whilst the third step included CAM beliefs and attitudes toward conventional psychotherapy. The so-

cio-demographic variables, i.e. gender, age and education explained 4.2% of variance in attitude toward CAM, $F(3,283) = 4.13, p = .007$. Adding tolerance for frustrations, cognitive styles (rational and experiential) and self-esteem to the model helped explain in total 13.9% of the variance in attitude toward CAM

($F(7,279) = 6.44, p < .001$), adding significantly to socio-demographic variables, R^2 change = .097, $F(4,279) = 7.87, p < .001$). In the third step, CAM beliefs and attitudes towards conventional psychotherapies explained additional 25% of variance ($F_{change}(2,277) = 55.37, p < .001$). The explained variance of the full model thus increased to 38.5% ($F(9,277) = 19.26, p < .001$). In the final model, the following significant predictors emerged: CAM beliefs ($\beta = .52, p < .001$), rational thinking ($\beta = -.15, p = .005$) and self-esteem ($\beta = .14, p = .011$).

Predictors of Attitudes Toward Conventional Psychotherapy

For comparison purposes, we tested potential predictors of attitudes towards conventional psychotherapy (the same set of predictors in three hierarchical steps, as described above). Socio-demographic predictors (gender, age, education) explained 11.3% of variance in attitudes toward conventional psychotherapy, $F(3,290) = 12.31, p < .001$. Adding low tolerance for frustrations, thinking styles and self-esteem to the model significantly improved its predictive power to 19.3% of variance, $F(7,286) = 9.78, p < .001, R^2_{change} = .8, F_{change}(4,286) = 7.11, p < .001$. However, adding CAM beliefs did not significantly change the explained variance, $R^2_{change} = .00, F_{change}(1,285) = .027, p = .871$. In the full model, gender ($\beta = .18, p = .001$), age ($\beta = -.29, p < .001$), self-esteem ($\beta = -.22, p < .001$), and low tolerance for frustrations ($\beta = -.21, p < .001$) emerged as the significant predictors (detailed in Table 3). As it can be seen, the only common predictor was self-esteem: higher self-esteem predicted higher attitude to CAM modalities but lower preferences for conventional psychotherapy. We will discuss the differences in the discussion section.

Additional Analyses

Comparison of Attitudes toward CAM between Mental Health Students and Professionals and the Community Sample

-We compare the attitudes toward conventional psychotherapy and CAM among mental health professionals and the community sample, using ANCOVAs, controlling for gender, age and education.

The attitude toward psychotherapy was significantly related to the covariates: gender, $F(1,289) = 5.067, p = .025, \eta^2 = .017$, age $F(1,289) = 10.557, p < .001, \eta^2 = .035$, and education, $F(1,289) = 5.227, p = .022, \eta^2 = .018$. Women, as well as relatively younger and more educated participants expressed more positive attitudes. However, after controlling for the covariates, significant differences emerged in that participants from helping professions expressed a slightly more positive attitude towards psychotherapies ($M_{helping} = 3.284, SD = 0.34; M_{others} = 3.081, SD = 0.34; F(1,289) = 16.001, p < .001, \eta^2 = .052$).

The attitude toward CAM treatments for mental health differed significantly depending on the participants' education level, $F(1,282) = 8.014, p = .005, \eta^2 = .028$ but not on age, $F(1,282) = 3.167, p = .076$ or gender, $F(1,282) = 1.544, p = .215$. The relatively less educated participants expressed somewhat more positive attitudes. Controlling for the covariates, the attitudes were not significantly different between participants from helping professions and those from other professions ($M_{helping} = 4.40, SD = .094; M_{others} = 4.39, SD = .094; F(1,289) = .004, p = .952$). The profession of the respondents did not prove to be a significant predictor of attitude towards CAM modalities ($\beta = -.06, p = .354$).

Next, we compared attitudes toward the two CAM treatments, NLP and Bach flower

remedies, using repeated-measures ANOVA. On average, our participants were distributed between a relatively skeptical to relatively favorable stance in relation to the CAM treatments. Neuro-linguistic programming received slightly higher ratings ($M = 38.35$, $SD = 29.78$) compared to Bach flower remedies ($M = 35.23$, $SD = 29.06$, $F(1,286) = 4.796$, $p = .029$, $\eta^2 = .016$).

Interestingly, we observed differences among the items within the attitudes toward CAM scales, suggesting that the exact wording plays a role in expressed preferences. Specifically, participants expressed more favorable attitudes for Bach flower remedies when they were asked whether they would like to try them ($M = 46.28$, $SD = 35.14$) than when asked whether they would prefer Bach flower remedies over conventional psychotherapy to deal with a mental health issue ($M = 24.70$, $SD = 27.83$, $F(1,290) = 169.265$, $p < .001$, $\eta^2 = .369$). The same pattern of results emerged for NLP: participants would be more willing to try NLP ($M = 46.90$, $SD = 34.62$) than choose it over conventional psychotherapy for treating mental health problems, $M = 29.48$, $SD = 28.96$, $F(1,286) = 137.641$, $p < .001$, $\eta^2 = .325$.

Mediation Analysis: Do CAM Beliefs Mediate the Relationship between Intuitive Thinking Style and Attitudes toward CAM

We wanted to test whether intuitive style had an indirect effect on attitude to CAM via CAM health beliefs, given the previous findings suggesting a crucial role of intuitive thinking style for irrational beliefs (Branković, 2019). To examine these relationships more closely, we conducted a mediation analysis using SPSS Process software (Hayes, 2013). Mediation was tested with 5,000 bootstrap samples. The mediation model is presented in Figure 1.

Analysis revealed that intuitive thinking style significantly predicted CAM health beliefs, ($F(1,285) = 14.23$, $p < 0.01$; $a = .31$, $SE = .08$, 95% CI [.146, .466]). Next, CAM health beliefs predicted attitude toward CAM ($F(2,284) = 75.35$, $p < 0.01$; $b = .56$, $SE = 1.26$, 95% CI [11.81, 16.77]). CAM health beliefs also partly mediated the association between intuitive thinking style and attitude to CAM ($ab = 4.37$, $SE = 1.20$, 95% CI [2.15, 6.85]). Direct effect also remained significant, ($c' = 3.81$, $SE = 1.77$, 95% CI [.32, 7.29]), and the overall model explained 35% of variance in attitude to CAM.

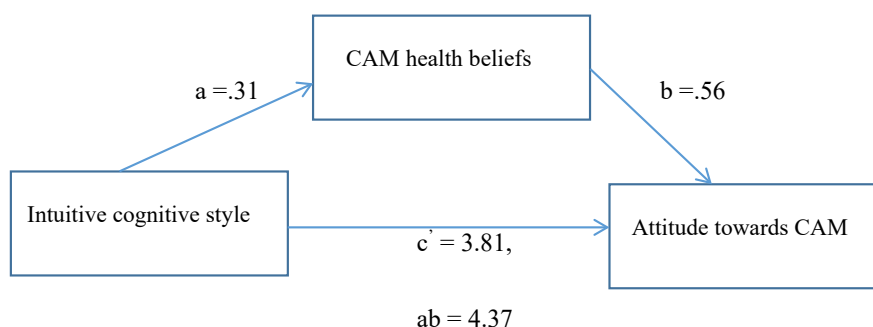


Figure 1 The relationship between intuitive cognitive style, CAM beliefs and attitude toward CAM

Discussion

Despite the rising interest in CAM among mental health professionals (WHO, 2019) and the general public (Tindle et al., 2005), the various CAM treatments remain insufficiently empirically verified. The present study examined psychological predictors of attitudes toward complementary and alternative treatments for mental health problems. We examined the role of self-esteem and frustration tolerance, rational and intuitive cognitive styles, CAM health beliefs, as well as attitudes toward conventional psychotherapy in predicting attitudes toward CAM. We revealed that CAM health beliefs are the most important predictor of attitudes toward CAM treatments for mental health problems, in line with hypothesis 1. Contrary to our hypothesis, self-esteem was positively related to attitudes toward CAM (H2). Low frustration tolerance showed a low correlation with attitudes toward CAM but did not emerge as an overall significant predictor. As predicted, a proneness to rational thinking negatively predicted attitudes toward CAM. At the same time, the intuitive cognitive style was related to more positive attitudes but mostly indirectly, via endorsement of CAM beliefs.

Our findings are consistent with the idea that the consumer's domain of values and beliefs is what largely determines the preference for CAM therapies (see also Wapf & Busato, 2007). While the socio-demographic, personality and cognitive style variables we examined captured only 14% of the variance in CAM preference, the model that included CAM beliefs explained almost 40% of the variance. Although attitude toward conventional psychotherapy did correlate negatively with CAM preference, it did not emerge as a significant predictor of attitude to CAM. Therefore, it is not likely that dissatisfaction with conven-

tional psychotherapy is the main reason for interest in CAM.

Cultural beliefs about the origin of mental disorders have been shown to affect willingness for conventional psychotherapy (Sheikh & Furnham, 2000). Also, the role of irrational beliefs has been demonstrated for CAM preferences in the domain of physical health (Lindeman, 2011; van den Bulck & Custers, 2010). A recent line of research further demonstrates the role played by irrational beliefs for health-related behaviors in the context of the COVID-19 pandemic (Lazarević et al., 2021; Teovanović et al., 2021). Conspiratorial beliefs and proneness to cognitive biases predicted the use of pseudoscientific treatments (e.g., garlic) against the COVID-19 virus (Teovanović et al., 2021).

We interpret the endorsement of CAM beliefs (CHBQ, Lie & Boker, 2004) as irrational, since they reflect perceiving health as a general balance of forces and believing in self-healing processes that are not in line with available medical understanding of how the human body works. Interpreting CAM beliefs as irrational is supported by previous research confirming that CAM beliefs have some of the same postulations as irrational paranormal beliefs (e.g., believing in distance healing) (Grimmer & White, 1990; Sjöberg & af Wåhlberg, 2002).

When comparing the predictors of attitude toward CAM and attitude toward conventional psychotherapy, our findings suggest different profiles of psychological determinants. CAM beliefs, that proved the most important predictor of CAM preference, were not related to attitudes toward psychotherapy. The same holds for rational and intuitive thinking styles; while they did not relate to attitude toward psychotherapy, rational style predicted less positive attitudes toward CAM, while intuitive style mostly affected the attitude toward CAM via an increase in CAM beliefs, as

suggested by our mediation analysis. The role of rational thinking style as a critical buffer to unscientific beliefs and practices is consistent with previous research (Lazarević et al., 2021; Pennycook, Fugelsang, & Koehler, 2015).

Individual differences in self-esteem (Ellis, 1994; Ellis & Dryden, 2007) proved important for both conventional psychotherapy and CAM, but, with different directions of influence. Lower self-esteem predicted a more positive attitude toward psychotherapy, while the opposite was true for attitude toward CAM. As low self-esteem could indicate experienced distress, and the level of distress positively predicts willingness for therapy (Komiya et al., 2000), this could explain the positive relation with attitude toward conventional psychotherapy. On the other hand, the positive relationship of attitude to CAM with self-esteem is consistent with the underlying motivation for empowerment and the desire to control the healing process revealed by previous studies (Wapf & Busato, 2007). This proposition merits further research. In addition, the analysis showed that attitude toward conventional psychotherapy was predicted by higher frustration tolerance, while it was not a significant predictor for the attitude towards CAM.

Implications of the Study

Our findings have important implications for understanding mental health care user choices. The better we understand the profiles of people open toward alternative approaches to mental health treatments, the more adequately we will be able to encourage them to make rational decisions. As stated, this is important since CAM treatments for mental health can vastly differ in their effects: while research supports that some alternative forms of therapy could have beneficial effects (Bettmann et al., 2016), other, often-times quite popular treatments, as NLP, have

not received virtually any empirical support (Witkowski, 2010).

From our findings, it appears that education in mental health professions does not lead to a more skeptical stance toward CAM treatments even when they are unsupported by research. This indicates a need to more explicitly discuss this topic as a part of formal education, especially of mental health professionals. This topic appears to remain completely overlooked in both curricula and the current legal provisions concerning mental health (Draft Bill Law on Psychotherapeutic Activities, 2021). The focus of this education should be on recognizing the importance of empirical assessment of treatments that should guide both practitioners as well as consumers. We can add that this should also apply to the various more acclaimed or conventional psychotherapeutic procedures and techniques.

Also, our findings suggest that the beliefs of the consumers appear to be the most important determinant of the evaluation of treatments. Coupled with the finding that high self-esteem entails more positive attitudes toward CAM, mental health services in general could benefit from providing opportunities for more participatory strategies related to treatment planning. Empowerment leading to a larger sense of control and appreciation could lead to more favorable attitudes to seeking help with mental health issues.

Limitations of the Study

The present study is a pioneering effort at understanding psychological determinants of CAM preference in the domain of mental health, and has some important limitations. We have only been able to investigate some and not all of the relevant psychological determinants of these attitudes. Future studies should situate these preferences in the larger nomological network, extending to the gener-

al personality traits, as well as more specific beliefs about mental health and cognitive biases that could be important for this domain.

A more representative and larger sample would also allow a more precise demographic profiling of potential CAM consumers, that we abstained from in this study, given the limitations of the convenience sampling.

In particular, our sample was recruited among the non-clinical population. This means that our participants did not necessarily experience mental health problems or need mental health support, and that their attitudes reflect general evaluations of the concept of CAM. Having this in mind, we would suggest that future studies consider incorporating the clinical population as well, to be able to extend and compare the present results.

While preference for CAM in the domain of physical health and prevention appear to be strongly shaped by conspiratorial thinking (Teovanović et al., 2021), we did not expect this to be the case for CAM treatment for mental health, at least with regard to psychotherapy. We are not familiar with specific conspiracy theories related to psychotherapeutic practice, although it is not impossible that such exist. Nevertheless, the general tendency for conspiratorial thinking might be relatable to preference and attitude toward CAM treatments and this idea merits further research.

Conclusion

The aim of the present study was to examine psychological determinants of attitudes toward CAM in the field of mental health. As potential predictors, we tested self-esteem and frustration tolerance, rational and intuitive cognitive styles, CAM health beliefs, and attitudes toward conventional psychotherapy.

We found that it is not likely that CAM preference stems from dissatisfaction with conventional therapy but that it has distinct psy-

chological determinants. CAM health beliefs showed to be the most important predictor of the attitudes toward CAM treatments for mental health problems. Whereas the propensity for rational thinking negatively predicted attitudes toward CAM, the intuitive cognitive style was related to more positive attitudes but mostly indirectly, via endorsement of CAM beliefs.

The present study thus points to the crucial importance of irrational thinking and beliefs in general attitudes toward CAM for mental health problems. Although there are diverse approaches and treatments under the CAM umbrella term, we highlighted two of the treatments that have explicitly tested negatively in terms of their purported effects. Future studies should aim to investigate the decision-making about the actual use of CAM treatments among people currently experiencing mental health problems. With this study, we hope to have contributed to understanding of some of the general factors of CAM preference, which should inform future efforts at more informed and rational decision-making in the domain of mental health treatments.

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Appendix

Appendix 1 - Bach flowers essences vignette

Bach flower essences - restore harmony to the body and allow us to become what our potentials give us

Dr. Bach invested all his knowledge to devise a simple and natural way of healing that will restore the inner balance of a person, making him satisfied and healthy. Dr. Bach's medical system focuses on the characteristics of the individual, and not on the characteristics of the disease and its symptoms. Bach's method of treatment has, unlike classical medicine, a holistic approach to treatment. This means that not only the individual symptoms of the disease are observed, but the totality of symptoms is observed: mental and emotional state, physical symptoms, gender, age, education, profession, living conditions, etc. This approach implies that each person is an individual for himself and as such he should be observed and treated. Accordingly, Bach practitioners will make a mixture of essences just for you. Bach drops can be used by all family members, regardless of age and condition.

Internal emotional and/or mental imbalance disturbs our inner peace and leads to illness. The cause of internal imbalance can be found in human's distance from our nature, from what we really are. As a result, mental disharmony occurs, followed by physical illness. That is why the basic task of the doctor of the future is to help the patient to know himself and his obstacles, his desires, and expectations so that he can live in harmony with himself. Bach's essences help us in that – they restore our authenticity and spontaneity and lead to the development of our capacities as a whole, treating both our feelings (fear, hurt, anger, sadness) and our mental states (impatience, pessimism, apathy, deconcentration).

The main characteristics of the preparation are that there are no contraindications, they are effective in acquiring properties that improve the quality of our everyday life, it is not necessary to believe in the effect of these drops for them to work, it does not exclude the use of other drugs and cannot be overdosed.

This method belongs to complementary medicine. This means that it does not exclude other methods. It can be used alone or in combination with other methods because floral medicines do not interfere with the already started treatment, nor do they change the effect of other medicines.

Retrieved March 20, 2021, Retrieved from: <http://www.bahovekapi.com/metoda/karakteristike>
Ruzica Ristic, Bach's practitioner

Appendix 2 – NLP vignette

N (euro) L (linguistic) P (programming) – three letters with great weight that improve our psychological life

NLP reveals your self-imposed limitations and teaches you to use the wide range of possibilities that are in front of you at all times, providing an opportunity to succeed in everything you undertake. NLP possesses dynamic methods that lead you to positive and creative states of consciousness, thus making goals achievable in any field.

It is the world's most famous communication model that studies communication with oneself to motivate oneself and achieve a goal and achieve successful communication with other people as well. This approach emphasizes the internal capacities that everyone possesses, then new attempts and the construction of new strategies if the previous ones have proved unsuccessful.

NLP therapy allows you to get out of crises in a fast and efficient way. The therapist is focused on the client's future, activating his potentials and achieving the goal. All aspects of the therapeutic process are covered: diagnostics, psychopathology and special formats. It is useful in relieving trauma, in psychosomatics, phobias, mood disorders, and motivation.

NLP as a therapeutic direction can be used:

- in the field of health, emphasizing that “there are no incurable diseases, there are only incurable people” – Every emotion has its localization in the body, causing imbalance first at the energy, then at the cellular level, resulting in certain symptoms, which turn into disease if not broken down. Pain or symptom is the language of our body, which thus tells us that we should accept and integrate those parts of ourselves that we do not like and that we do not like.
- on the domain of progress in sports because “the most perfect machine is a man” – It is focused on the development of potential and performance to achieve goals. It is based on planning and developing a successful sports career, by changing restrictive behaviors to new, desired and more successful ones.
- in the business plan because “success is a matter of choice” – The driving process of change focused on the business environment, realization of set goals, career advancement, project management, organizational change, raising productivity, profits and success

Retrieved March 20, 2021, Retrieved from the NLP Center website - <https://nlpcentar.com/sta-je-nlp/>

And from the site <https://www.vesnadanilovac.com/prvi-nlp-psihoterapeut-u-srbiji/>, Vesna Danilovac, NLP psychotherapist