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IMPLICIT AND EXPLICIT MOTIVATION TOWARDS YOGA PRACTICE AMONG WOMEN: A PILOT STUDY

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Abstract

Yoga is an important health behavior which has a positive impact on women's health. This study contributes in our understanding of what motivates women to practice yoga. Based on self-determination theory, implicit and explicit motivation towards yoga was investigated. Forty women who practice yoga took part in a cross-sectional study. The Sports Motivation Scale measured explicit motivation; Single Category Implicit Association Task measured implicit motivation. Explicit intrinsic motivation towards yoga is higher compared to extrinsic motivation ($p < .0001$). Moreover, intrinsic and extrinsic motivation correlate with each other ($r = .451, p < .001$). Implicitly yoga is associated with intrinsic motivation stronger compared to extrinsic motivation ($Z = 2.621, p = .009$). Implicit and explicit motivation towards yoga correlate ($r = .377, p < .02$). The study showed that conscious and non-conscious motivations towards yoga are related to each other. The main motivation related to yoga is intrinsic, both consciously and non-consciously. However, since intrinsic and extrinsic motivations correlate, the more motivation towards yoga is associated with pleasure, the more it is associated with reward and vice versa.

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Keywords: Yoga, implicit motivation, explicit motivation, intrinsic motivation, extrinsic motivation, women health.



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1. Introduction

Yoga is a practice of physical exercises which has philosophical and spiritual roots (Park et al., 2014). Yoga practice is beneficial for human physical health: weight loss (Galantino et al., 2012; Roland et al., 2011), normalization of arterial pressure (Innes et al., 2005; Yogendra et al., 2004), sleep quality (Ross et al., 2013). Yoga practice is also beneficial for mental health: it decreases stress levels (Büssing et al., 2012; Chong et al., 2011), anxiety level (Telles et al., 2009) and increases mindfulness (Miyata et al., 2014). It is thus important to identify factors which motivate people to practice yoga.

Current study is aimed to analyse which motivation type prevails in women yoga practitioners. The study focuses on women, as they represent the majority of yoga practitioners in Russia, as well as internationally (Park et al., 2014). Besides, the research shows benefits of yoga practice on women's health and wellbeing (Rhodes et al., 2016).

Theoretical and methodological base of the study is the self-determination theory (SDT), which is currently considered to be one of the major motivation theories (Deci, 1995). The SDT proposes a continuum with various degrees of individual autonomy. Intrinsic motivation implies most self-determination, and includes three types: intrinsic motivation towards knowledge, towards accomplishment and towards experience stimulation. Extrinsic motivation, alternatively, describes the activities that involve rewards or punishment avoidance: external regulation, introjected regulation and identified regulation. Finally, the continuum is concluded by the amotivation.

Extrinsic and intrinsic motivations can be conscious and explicit, but they can also be non-conscious or implicit. While conscious (explicit) motivation is widely investigated, less is known about non-conscious (implicit) motivation (Papies et al., 2007). It is important to take into account implicit motivation, because implicit processes (cognitive, emotional and motivational) are considered to be one of the factors explaining the gap between the intention and health behaviors (Sheeran, et al., 2014).

2. Problem Statement

Considering the congruence between implicit and explicit motivation, not so much research has been done in this sphere so far. The meta-analysis (Köllner & Schultheiss, 2014; Spangler, 1992) revealed statistically significant, though quite low correlation between the two. This might mean that implicit and explicit motivation are independent processes. One of the goals of current study therefore is to investigate the particularities of implicit and explicit motivation of yoga practice in women. Understanding what motivates women to practice, both implicitly and explicitly, shall result in more effective involvement of people into health behavior. To our knowledge, this is the first study to investigate the consistency of explicit and implicit motivation of yoga practice.

3. Research Questions

In present study we answer several questions:

- 1) which type of explicit motivation prevails among women who practice yoga?
- 2) which type of implicit motivation prevails among women who practice yoga?

3) do explicit and implicit motivation of yoga practice correlate with each other?

4. Purpose of the Study

Present study investigated explicit and implicit motivation towards yoga.

5. Research Methods

5.1. Sample

Forty-one women were recruited to take part in the study. All women practice yoga in different yoga-clubs in Moscow region. Age range was from 26 to 60 years; mean age was 39, standard deviation – 10 years. Participants had no mental disorders and chronic illnesses by self-report. All participants gave an informed oral consent prior to taking part in the study. This study has been carried out in accordance with The Code of Ethics of Ethics of the World Medical Association (Declaration of Helsinki).

5.2. Explicit motivation

The Sport Motivation Scale (SMS; Pelletier et al., 1995) validated in Russia (Kvitchasti et al., 2012) was used to measure explicit intrinsic and extrinsic motivation towards yoga. SMS includes 28 statements related to yoga practice (e.g., I practice yoga because I feel better about myself when I do) evaluated on 7-point scale: 1 (does not correspond at all) to 7 (corresponds exactly). The instruction was modified in order to investigate yoga motivation. SMS has several subscales, including three subscales of intrinsic motivation: intrinsic motivation to know (exploration, curiosity, learning goals), intrinsic motivation towards accomplishments (mastery, efficacy motivation), intrinsic motivation to experience stimulation (sensory pleasure, excitement); three subscales of extrinsic motivation: external regulation (motivation related to material rewards or constraints imposed by others), introjection (motivation related to internal pressures); identification (motivation related to evaluation of a behavior as important); and one subscale of amotivation.

Cronbach's alpha for the subscales was for following: intrinsic motivation to know (Cronbach's Alpha = 0.65), intrinsic motivation towards accomplishments (Cronbach's Alpha = 0.67), intrinsic motivation to experience stimulation (Cronbach's Alpha = 0.74), external regulation (Cronbach's Alpha = 0.66), introjection (Cronbach's Alpha = 0.82), identification (Cronbach's Alpha = 0.75), amotivation (Cronbach's Alpha = 0.74).

5.3. Implicit motivation

Single category Implicit Association Test (hereinafter SC IAT; Karpinski, Steinman, 2006) was used to measure implicit motivation towards yoga practice. The test includes working with three categories of words. First category includes words associated with yoga: flexibility, meditation, breath, asana, harmony. This category was intitled "YOGA". Second category includes words associated with intrinsic motivation: interesting, enjoyable, fun, exciting, and fascinating. This category was intitled PLEASANT. Third category includes words associated with extrinsic motivation: important, meaning, value, identity, and worthwhile. This category was intitled USEFUL. The titles of categories related to extrinsic and intrinsic motivation (pleasant and useful) were used in order to make the test simpler for our participants who have

no knowledge about intrinsic and extrinsic motivation constructs. Prior to conduct this study, we asked 20 volunteers what words come to their minds when they think about yoga. We collected five most frequent responses and used them in the SC IAT as words associated with yoga. Words associated with intrinsic motivation and extrinsic motivation were collected from Self-Regulation Scale (Ryan & Connell, 1989). Words associated with intrinsic motivation: interesting, enjoyable, fun, exciting, fascinating; words associated with extrinsic motivation: important, meaning, value, identity, worthwhile. The task was computerized and performed on a laptop. SC IAT was programmed in PsychoPy specifically for this study.

Before the test began, the participants were asked to read carefully the titles of categories and words which belong to them. Next, the participants performed three blocks of computerized test. In the first block they were asked to categorize words, related to two categories: PLEASANT and USEFUL. Words were appearing in a center of the screen, one by one. The participants were asked to press the button “E” when word appeared was related to category PLEASANT and the button “I” if it was related to category USEFUL. There were 20 trials in this block. In the second block, the participants were asked to categorize words, related to three categories: PLEASANT, USEFUL and YOGA. They were asked to press the button “E” when word appeared was related to category PLEASANT or YOGA and the button “I” if it was related to category USEFUL. There were 40 trials in this block. In the third block the participants were asked to categorize the same words. However, this time they were asked to press the button “E” when word appeared was related to category PLEASANT and the button “I” if it was related to category USEFUL or YOGA. Participants were asked to work as fast as they could making no mistakes, if possible. The order of Block II and Block III was interpolated across the participants.

The test is based on the hypothesis that if yoga is associated with intrinsic motivation, the participants will work faster in Block II compared to Block III. If yoga is associated with extrinsic motivation, the participants will work faster in Block III compared to Block II. The analysis of data was thus based on reaction time calculation and comparison between Block II and Block III. D-score was calculated (Greenwald et al., 1998). The positive D-score signifies a stronger association between yoga and intrinsic motivation, while the negative D-score signifies a stronger association between yoga and extrinsic motivation.

5.4. Procedure

Participants met with the experimenter in a separate room, they were tested individually. In order to avoid the possibility that completed the Sport Motivation Scale (SMS) would influence the performance of Single category Implicit Association Test (SC IAT) and vice versa, the order of presentation of the SMS and the SC IAT was counterbalanced among participants. Twenty participants performed the SMS and next performed the SC IAT; Twenty-one participants performed SC IAT and next performed SMS. The whole procedure lasted 60 minutes.

5.5. Statistical analysis

Data were tested for normality using Kolmogorov-Smirnov test. Because several variables were not distributed normally (Kolmogorov-Smirnov test, $p < .05$) non-parametric statistics was used. Descriptive statistics (medians and interquartile ranges) were reported for all variables.

To compare explicit motivations towards yoga and detect the leading explicit motivation Friedman test and post-hoc pairwise comparisons (with Bonferroni correction for multiple comparisons) were performed. Because we were interested in comparing intrinsic and extrinsic motivation, we collapsed three subscales of intrinsic motivation in Sports Motivation Scale (intrinsic motivation to know, intrinsic motivation towards accomplishments, intrinsic motivation to experience stimulation) to acquire an average score of intrinsic motivation. We also collapsed three subscales of extrinsic motivation (external regulation, introjection, identification) to acquire an average score of extrinsic motivation. The same procedure was performed in previous studies (Walker et al., 2006; Woolley & Fishbach, 2018).

To investigate implicit motivation towards yoga practice, one sample Wilcoxon signed-rank test was conducted. To test the hypothesis about the non-congruence of implicit and explicit motivation towards yoga, we performed correlation analysis between explicit motivation variables and implicit motivation score. Non-parametric Spearman correlation coefficients were used.

6. Findings

6.1. Explicit motivation

Seven types of explicit motivation were differently distributed among our participants (the Friedman test was significant; $\chi^2(6) = 160.49, p < 0.0001$). Pairwise comparisons were performed (Bonferroni correction adjusted).

Intrinsic motivation towards accomplishments was higher compared to amotivation ($p < 0.001$) and three types of extrinsic motivation: external regulation ($p < 0.001$), identified regulation ($p < 0.001$), and introjected regulation ($p < 0.001$; see Table 1 illustrating medians and interquartile ranges and Figure 1). Intrinsic motivation to know was higher compared to amotivation ($p < 0.001$) and two types of extrinsic motivation: external regulation ($p < 0.001$) and identified regulation ($p = 0.047$). Intrinsic motivation to experience stimulation was higher compared to amotivation ($p < 0.001$) and one type of extrinsic motivation: external regulation ($p < 0.001$). Introjected regulation was higher compared to amotivation ($p < 0.001$) and external regulation ($p < 0.001$). Finally, identified regulation was higher compared to amotivation and ($p < 0.001$) external regulation ($p = 0.001$).

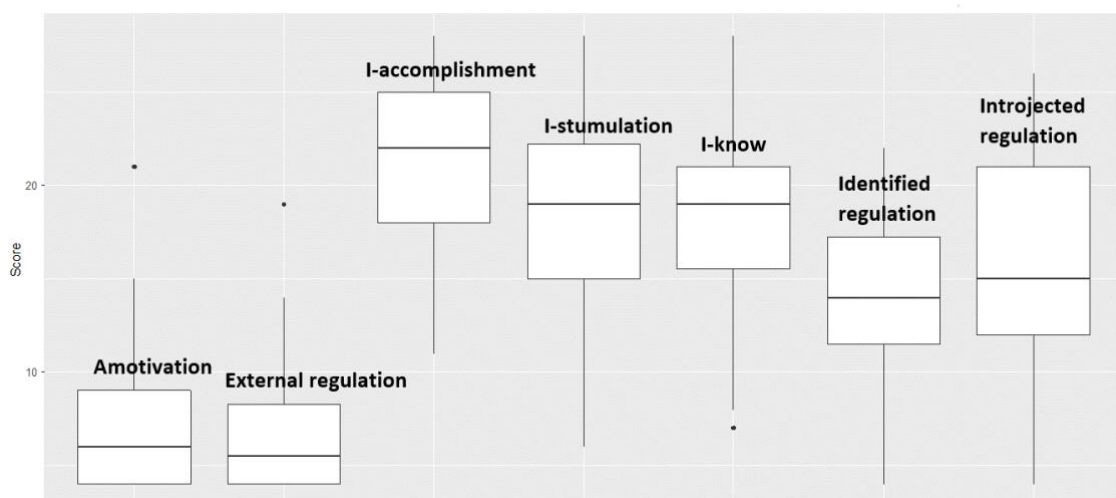


Figure 01. Medians and interquartile ranges of seven explicit types of motivation

In a separate analysis, average intrinsic, extrinsic motivations and amotivation were compared. There was a significant difference between them (Friedman test was significant; $\chi^2(2) = 63.95, p < 0.0001$). Pairwise comparisons were also significant: intrinsic motivation was higher than amotivation ($p < .001$) and extrinsic motivation ($p < .001$). Extrinsic motivation was higher than amotivation ($p = .005$; Bonferroni correction adjusted).

Table 01. Medians and interquartile ranges of study variables

Variables	Median	IQR
Implicit motivation		
Implicit motivation	0.196	0.356
Explicit intrinsic motivation		
IM-to know	19	5.5
IM-accomplishment	22	7
IM-stimulation	19	7.25
Average Intrinsic motivation	19.67	4.17
Explicit extrinsic motivation		
Identified regulation	14	5.75
Introjected regulation	15	9
External regulation	5.5	4.25
Average extrinsic motivation	12.5	5.42
Amotivation		
Amotivation	6	5

Note: IQR – interquartile range. Implicit motivation – positive score designates intrinsic motivation, negative score designates extrinsic motivation. IM-to know – intrinsic motivation to know. IM-accomplishment - intrinsic motivation towards accomplishments. IM-stimulation - intrinsic motivation to experience stimulation.

6.2. Implicit motivation

The mean score of implicit motivation was 0.16 and the median was 0.196. It was significantly different from zero ($Z = 2.621, p = .009$). That is, participants categorized words faster when yoga was paired with implicit motivation. Thus, implicitly yoga is associated with intrinsic motivation more compared to extrinsic motivation.

Finally, we conducted correlation analysis between explicit and implicit motivations (see Table 2). Implicit motivation correlated positively with identified regulation, introjected regulation and average score of extrinsic motivation. Interestingly, explicit intrinsic and extrinsic motivation correlated positively with each other.

Table 02. Correlation coefficients between different types of motivation

	1)	2)	3)	4)	5)	6)	7)	8)	9)
	1)	2)	3)	4)	5)	6)	7)	8)	9)
1) Implicit motivation	-								
2) I to know	-0.05	-							
3) I accomplishment	(0.77)								
3) I accomplishment	0.23	.326	-						
4) I stimulation	(0.15)	(0.04)							
4) I stimulation	0.26	.316	.464	-					
5) Identified regulation	(0.10)	(0.05)	(0.00)						
5) Identified regulation	.359	.449	0.29	.536	-				

	(0.02)	(0.00)	(0.07)	(0.00)					
6) Introjected regulation	.408	0.03	.357	0.19	.472	-			
	(0.01)	(0.87)	(0.02)	(0.24)	(0.00)				
7) External regulation	0.11	0.31	0.18	0.17	.414	.402	-		
	(0.50)	(0.05)	(0.26)	(0.29)	(0.01)	(0.01)			
8) Amotivation	-0.18	0.15	-0.20	-0.04	0.22	0.16	0.20	-	
	(0.26)	(0.34)	(0.22)	(0.79)	(0.17)	(0.32)	(0.21)		
9) Intrinsic	0.16	.701	.764	.766	.551	0.22	0.27	0.02	-
	(0.32)	(0.00)	(0.00)	(0.00)	(0.00)	(0.17)	(0.09)	(0.90)	
10) Extrinsic	.377	.323	.384	.369	.727	.862	.699	0.24	.451
	(0.02)	(0.04)	(0.01)	(0.02)	(0.00)	(0.00)	(0.00)	(0.14)	(0.00)

Note: Significant correlations are in bold

7. Conclusion

Present study investigated explicit and implicit motivation towards yoga. We found that explicitly, intrinsic motivation towards is the prevailed motivation among women who practice yoga. This indicates that the desires of exploration of yoga and curiosity towards it, master yoga and feel sensory pleasure and excitement during practice, motivate women to practice yoga. This finding is in line with previous studies of motivation in yoga practitioners and in sport in general, which underlined the importance of intrinsic motivation. Namely, it was revealed that women practice yoga to reach relaxation and reduce stress (Park et al., 2014). Moreover, it was found that intrinsic motivation is positively related to sport-based competitiveness (Frederick-Recascino & Schuster-Smith, 2003) as well as helps reduce sport drop-out (Calvo et al., 2010).

At the same time, intrinsic and extrinsic motivation towards yoga practice correlated with each other. That is, more women want to practice yoga for excitement and pleasure, more they want to practice it because of its value and importance, and vice versa. Usually it is supposed that internal and external motivations contradict one another. However, a recent study in schoolchildren showed that intrinsic and extrinsic motivation can exist in parallel and are not mutually exclusive (Lemos & Veríssimo, 2014).

Implicitly, intrinsic motivation also prevails among women who practice yoga. That is, non-consciously yoga is associated with excitement and pleasure, rather than with importance and meaningfulness. Besides, explicit and implicit motivation of yoga practice correlate with each other. Previous studies, on the contrary, claim that implicit and explicit motives cannot correspond, as the implicit ones relate to affective response, whereas explicit ones – to cognitive response (Weinberger & McClelland, 1990). Correlation between implicit and explicit motivation is reported to be significant, but low (Spangler, 1992). In relation to yoga, we suppose that existing correlation between implicit and explicit motivation may be explained with relatively high level of mindfulness in yoga practitioners, that was shown in a recent study (Miyata et al., 2014).

Overall, the present study identified prevailed implicit and explicit motivation of yoga practice among women. Both implicitly and explicitly, intrinsic motivation, related to curiosity, pleasure and excitement during yoga practice motivates women to practice yoga. This finding can be used in programs which promote yoga practice as health behavior. More specifically, they may arrange associations between yoga and pleasure, excitement and curiosity (rather than prestige, value and importance) in order to motivate women to practice it. The main limitation of this finding is related to correlational design of present study.

Future studies may investigate how different types of motivation impact on regularity of yoga practice longitudinally.

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