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### Psychology of Personality: Real and Virtual Context

# SOCIAL BELIEFS ABOUT COMPLAINTS IN INTERPERSONAL COMMUNICATION AND SUBJECTIVE PAIN

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### *Abstract*

Both common-sense model of health and illness and psychological model of body functions regulation suggest that any uncomfortable sensations make the person to look for their meaning in the world that could further lead to symptoms' perpetuation. The study suggests that subjective beliefs about functions of pain-related complaints in interpersonal communication are related to pain severity in general population. 113 adults without severe somatic or mental illnesses appraised 9 wide-spectrum pain complaints (headache, heartache, back pain etc.) by 6 functions they could be used for in the communication ("to make excuse", "to blame others", "to gain profit", "to have or support own social status", "to receive emotional support", "to receive instrumental support"). Then they appraised to what degree they experience each type of pain themselves and filled Cognitions about Body and Health Questionnaire and Health Values Scale. For six out of nine pain types subjective beliefs in their usefulness in communication were related to their subjective severity ( $r=.20-.32$ ). For abdominal pain, headache, heartache, pain in eyes and toothache social beliefs predicted pain severity after adjusting for other cognitive factors of somatization adding 4.4%-10.5% to the explained variance of pain severity.

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**Keywords:** Cognitive factors of somatization, general population, interpersonal communication, pain, social beliefs about pain.



## **1. Introduction**

Cross-cultural studies demonstrated that cultural differences in self-reported symptoms might be explained by differences in interoceptive perception and consequent different social expectations regarding way of sharing poor well-being with others (Ma-Kellams et al., 2012). Both common-sense model of health and illness (Leventhal et al., 2003) and psychological model of body functions regulation (Tkhostov, 2002) suggest that any uncomfortable sensations make the person to look for their meaning in the world. Subjective representation of symptoms that person constructs, further regulate his or her complaints as well as decisions in treatment and could lead to symptoms' perpetuation. This is especially important for complaints on pain due to difficulties of its objective verification and so high dependence on psychological and social factors.

Based on these models we suggested that at least somatic complaints frequent in general population are related to specific social beliefs describing situations when these complaints could be used in the interpersonal interactions (Rasskazova & Migunova, 2014). Particularly, people tend to complaint on some somatic problems more if these complaints could help to receive emotional or instrumental support, social status, to make excuse, to gain some profit, to blame others, etc. Social beliefs about symptoms might further become a factor of their perpetuation due to body monitoring and somatosensory amplification (Barsky & Wyshak, 1990), catastrophizing of body sensations or dysfunctional behavior (Rief et al., 1998). We also suggest that social beliefs about the role of symptoms in interpersonal communication could directly lead to higher complaints in people holding such beliefs. Empirical study of sleep-related complaints (poor sleep and sleepiness) in general population supported that they were related to social belief that such complaints are helpful in obtaining instrumental support (Rasskazova, 2019). This effect remained after adjusting for other cognitive factors of somatization (Rief et al., 1998).

## **2. Problem Statement**

This study is focused on wide-spreaded pain-related complaints in general population: abdominal, joint, back pain, pain in the eyes, in the arms and legs, headache, heartache, toothache and sore throat.

## **3. Research Questions**

The aim was to reveal the relationship between pain-related complaints and subjective beliefs about their role in interpersonal communication in general population.

## **4. Purpose of the Study**

In line with psychological model of body functions regulation we hypothesized that:

1. The more people believe that some pain-related complaints could be beneficial in interpersonal communication, the higher the probability that they themselves report such complaints.
2. Some social functions are more typical for some pain-related complaints than for other.
3. The relationship between social beliefs about functions of complaints and pain remains after adjusting for cognitive beliefs about body, health and illness.

## 5. Research Methods

### 5.1. Sample

113 adults living in Moscow or Moscow region, Russia (28 males, 24.8%) 21-76 years old (mean age was  $37.8 \pm 15.2$  years old) without chronic somatic illnesses related to pain and refusing mental health diagnoses in the past participated in the study.

### 5.2. Methods

First, they read a text: "Sometimes person really has some complaint and at the same moment use it for some other purpose (for instance to make excuse for some responsibilities that he didn't complete). Please, for each symptom below appraise how frequently, to your opinion, people complaint for their real symptoms to receive something from others". Then they appraised a list of 39 different mental and somatic complaints by 0-10-points Likert scale ("0" – never and "10" – always) by six social functions ("to make excuse", "to blame others", "to gain profit", "to have or support own social status", "to receive emotional support", "to receive instrumental support"). Nine pain-related symptoms included abdominal, joint, back pain, pain in the eyes, in the arms and legs, headache, heartache, toothache and sore throat. Others were used as distractors.

Second, participants appraised using 0-10-points Likert scale to what degree they experience each of the symptoms in their lives.

Finally, they filled Cognitions about Body and Health Questionnaire (Rief et al., 1998) and Health Values Scale (Rasskazova et al., 2016). Cognitions about Body and Health Questionnaire was developed to measure cognitive beliefs that are typical for patients with somatoform disorders and hypochondriac disorder and includes the next scales: Catastrophizing of Body Symptoms, Autonomic Sensations, Bodily Weakness, Intolerance of Bodily Complaints, Health Habits, Somatosensory Amplification. Health Values Scale assess cognitive beliefs in four different models of health and personal health care that are related to somatic complaints in general population: health as an exhaustible resource demanding for permanent defense and preservation, health as a capacity that could be lost and should be regularly monitored for possible risks, health as a necessary condition for success in life that might be achieved for money, health a mystical holistic thing that should be supported by alternative treatment only.

Data were processed in SPSS Statistics 23.0.

## 6. Findings

### 6.1. Subjective pain and social beliefs about functions of pain-related complaints in the interpersonal communication

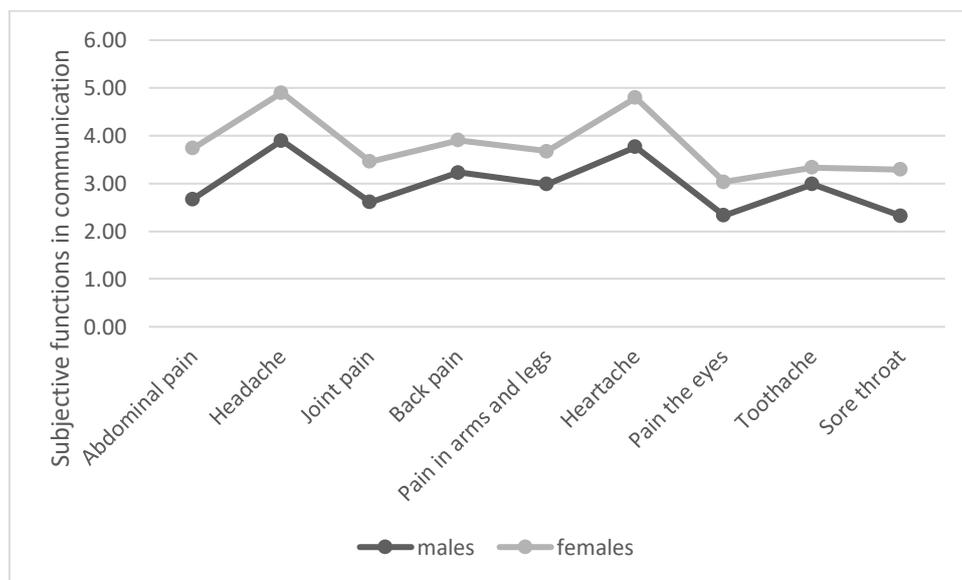
As can be seen in Table 01, the most typical pain-related complaints were abdominal pain, headache, pain in eyes and sore throat. In our sample females reported back pain and heartache more frequently than males ( $t = -2.02$ ,  $p < .05$ ,  $\eta = .17$  and  $t = -2.35$ ,  $p < .05$ ,  $\eta = .19$ , respectively) while abdominal pain was for frequent and joint pain was less frequent in younger people than in elder people.

**Table 01.** Frequency of pain complaints in males and females and its' relationship to age

Pain localizations	Males		Females		Correlations with age	Cronbach's alphas for symptoms' functions in communication
	Mean	Std. Deviation	Mean	Std. Deviation		
Abdominal pain	2.61	2.50	3.21	2.54	-.25**	.90
Headache	3.54	2.73	3.79	2.73	-.11	.92
Joint pain	1.50	2.17	2.06	2.74	.19*	.92
Back pain	2.21	2.48	3.38	3.09	.01	.92
Pain in arms and legs	1.68	2.18	1.80	2.39	.18	.90
Heartache	1.07	1.94	2.16	2.63	.14	.93
Pain the eyes	2.50	2.92	2.44	2.67	-.08	.91
Toothache	1.14	1.08	1.47	1.71	.06	.89
Sore throat	3.43	2.49	3.27	2.30	-.10	.91

Notes: \* -  $p < .05$ , \*\* -  $p < .01$ .

Beliefs about different functions of pain-related complaints in interpersonal communication demonstrated high consistency with each other (see Cronbach's alphas in Table 1) so we computed general indexes of beliefs for each pain type. The only difference in social beliefs in men and women was that women more frequently reported that people complaint for abdominal symptoms to get some profit in interpersonal communication ( $t = -2.07$ ,  $p < .05$ ,  $\eta = .19$ ). Elder people less likely believed in social functions of abdominal, joint, back pain and headache complaints ( $r = -.29 - -.20$ ,  $p < .05$ ). 2 (Gender)  $\times$  9 (Pain type) ANOVA with repeated measures revealed the major effect of Pain type ( $F = 11.92$ ,  $p < .01$ ,  $\eta^2 = .48$ ): all the participants that complaints for headache and heartache are more frequently used in communication for some social profit (Figure 01).



**Figure 01.** Social beliefs about the role of pain-related complaints in interpersonal communication in males and females

## 6.2. Relationship between social beliefs about functions of complaints and different type of pain: the role of beliefs about health and body

Most pain-related complaints, except for joint pain, pain in arms and legs and sore throat are related to social beliefs that they could be used in interpersonal communication (Table 02).

In line with the studies of cognitive factors of somatization (Rief et al., 1998), reports of autonomic sensations, belief in body weakness and somatosensory amplification are related to higher joint pain and toothache. Autonomic sensations and somatosensory amplification are higher in those complaining on abdominal pain, headache, backpain, heartache, pain in eyes and sore throat.

**Table 02.** Correlations between pain-related complaints

Correlations	Abdominal pain	Headache	Joint pain	Back pain	Pain in arms and legs	Heartache	Pain the eyes	Toothache	Sore throat
Social beliefs about functions of complaints in communication	.32**	.31**	.08	.20*	.14	.29**	.28**	.27**	.10
Autonomic Sensations	.27**	.27**	.21*	.25**	.08	.30**	.35**	.23*	.25**
Body Weakness	.05	.00	.20*	.10	.20*	.18	.10	.29**	.16
Somatosensory Amplification	.20*	.18	.35**	.32**	.17	.29**	.40**	.28**	.28**
Health as a Resource	-.06	.02	-.12	-.04	-.20*	-.01	.03	.05	.04
Health as a Success	-.24*	-.04	.06	.00	-.15	.06	.00	.11	.10
Health as a Risk	-.06	-.11	-.06	-.09	-.22*	-.05	-.03	.03	-.01

Notes: \* -  $p < .05$ , \*\* -  $p < .01$ .

To reveal whether this effect of social beliefs is specific for different pain localizations or general for different types of pain we computed partial correlations between social beliefs about functions of complain and its severity after adjusting for social beliefs about other types of pain (so adjusting for 8 variables). Only for abdominal pain correlation remained significant ( $r = .21$ ,  $p < .05$ ) indicating that for most types of the pain in general population there is general not specific effect of social beliefs.

To test the hypothesis that subjective functions of complaints predict different types of pain after adjusting for cognitive beliefs about health and body we conducted a series of hierarchical regressions (for each pain-related complaint). Joint pain, pain in arms and legs and sore throat were not included in the analysis because their frequency was not related to their subjective functions in the communication. At Step 1 we included any beliefs about health and body that correlated with this complain in our sample (see Table

02). At Step 2 we added to the equation subjective beliefs about this concrete symptom. According to the results (Table 03), for abdominal pain, headache, heartache, pain in eyes and toothache subjective beliefs in functions of complain significantly predicted complaints adding further 4.4%-10.5% of the explained variance. The only exception was back pain that was related to general report of autonomic sensations and somatosensory amplification.

**Table 03.** The relationship between subjective functions of the complaint in communication and pain: hierarchical regression analysis

Dependent variables	Step 1. IV: Beliefs about health and body	Step 2. IV: Subjective functions of the complaint in communication
Abdominal pain	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.19</math></li> <li>• Somatosensory Amplification <math>\beta=.20</math></li> <li>• Health as a Success <math>\beta=-.32^{**}</math></li> </ul> $\Delta R^2=16.6\%^{**}$	$\beta=.30^{**}$ , $\Delta R^2=9.0\%^{**}$
Headache	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.27^{**}</math></li> </ul> $\Delta R^2=7.5\%^{**}$	$\beta=.32^{**}$ , $\Delta R^2=10.5\%^{**}$
Back pain	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.08</math></li> <li>• Somatosensory Amplification <math>\beta=.27^*</math></li> </ul> $\Delta R^2=10.6\%^{**}$	$\beta=.17$ , $\Delta R^2=2.8\%$
Heartache	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.19</math></li> <li>• Somatosensory Amplification <math>\beta=.17</math></li> </ul> $\Delta R^2=10.5\%^{**}$	$\beta=.27^{**}$ , $\Delta R^2=7.2\%^{**}$
Pain in the eyes	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.16</math></li> <li>• Somatosensory Amplification <math>\beta=.30^*</math></li> </ul> $\Delta R^2=17.5\%^{**}$	$\beta=.23^{**}$ , $\Delta R^2=5.2\%^{**}$
Toothache	<ul style="list-style-type: none"> <li>• Autonomic Sensations <math>\beta=.07</math></li> <li>• Bodily Weakness <math>\beta=.20</math></li> <li>• Somatosensory Amplification <math>\beta=.13</math></li> </ul> $\Delta R^2=11.1\%^{**}$	$\beta=.22^*$ , $\Delta R^2=4.4\%^*$

Notes: \* -  $p<.05$ , \*\* -  $p<.01$ . IV – Independent variables

## 7. Conclusion

Due to correlational design this study does not allow to conclude whether people with higher pain-related complaints stronger believe that these complaints could be helpful in social interactions (for instance, as a coping with pain or due to more communication with others about their pain) or whether social beliefs about functions of pain-related complaints could be a factor for further pain perpetuation. Our data indicate that there is a relationship between personal beliefs about social functions of pain and subjective pain severity in general population. Moreover, in contrast with our second hypothesis, this relationship seems to be specific neither to concrete social functions (because social beliefs about different

function of complain in communication are highly consistent with each other) nor to pain localization. The only exception is abdominal pain. It seems that social beliefs about complaints on abdominal pain could be specifically related to complaints regardless of beliefs about other types of pain.

We also found that the relationship between social beliefs about functions of pain-related complaints and complaints' severity is not explained by other cognitive factors of somatization and hypochondrization. Indeed pain-related complaints were related to reported autonomic sensations, belief in bodily weakness and somatosensory amplification, but beliefs about social functions of symptoms still predicted pain severity after adjusting for other cognitive beliefs.

In general, the data are in line with both common-sense model of health and illness (Leventhal et al., 2003) and psychological model of body functions regulation (Tkhostov, 2002) suggesting that subjective meaning of pain could be important component illness representation probably affecting further pain worsening or perpetuation. Subjective beliefs that pain-related complaints could be helpful in interpersonal communication were related to subjective pain severity for five out of 9 types of pain (abdominal pain, headache, heartache, pain in eyes and toothache) after adjusting for other cognitive factors of somatization.

Further research is necessary for explain whether social beliefs could be a factor of pain perpetuation or just a consequence of pain-related experience.

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