The mediating effect of stress coping between cynical hostility and perceived stress – preliminary findings

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ABSTRACT

This study aimed to examine the relationship between cynical hostility and stress coping strategies. On the grounds of previous findings it was suggested that cynical hostility is positively related to ineffective coping strategies and negatively associated with effective coping strategies, especially with regard to use of social support. It was also hypothesised that coping strategies are mediating variables in the relationship between cynical hostility and perceived stress. The study was conducted on 244 university students (including 151 women and 89 men, 4 participants did not report gender). Mean age was $M = 21.22$ years ($SD = 2.80$). Valid, reliable and widely used psychometric tools were applied. The results were largely consistent with the hypotheses. Cynical hostility was positively associated with mental disengagement, an ineffective coping mechanism, and negatively associated with effective coping strategies: use of instrumental and emotional social support, positive reframing, planning and turning to religion and spirituality. Stress coping strategies were complete mediators of the relationship between cynical hostility and perceived stress. The results describe a coherent image of a cynically hostile person, who easily disengages in stressful situations, is unable to effectively use social support and has inflexible perception of reality that is associated with inability of positive reframing.

1. Introduction

From the very beginning of human evolutionary development, hostility and mutual distrust have been common and natural phenomenon. In many animals, including humans, aggression may have evolved as a means to defend oneself and one's relatives against attack (Archer 1988). Increased vigilance could have prepared an individual's efficacy in detecting threatening stimuli coming from social and physical environment, enhancing chances of survival in certain contexts. Such reaction is associated with activating of sympathetic nervous system and stimulating fight-or-flight response. In modern world people seem to face very complex and sophisticated challenges, where this type of chronic stress activation may have outcomes that are detrimental to health. Such negative results may have negative influence on wellbeing. Thus, it is essential to understand the mechanisms of chronic stress and its cognitive basis, including maladaptive beliefs about human nature. This kind of knowledge might be useful in developing preventive programs in the fields of healthcare and education.

Cynical hostility, defined as an enduring, negative attitude toward others involving cognitive, affective, and behavioural components, has progressively been established as a psychological characteristic with a negative impact on health, and recently its potential role is starting to be recognized in educational studies (Sawicki et al. in press). Three main components of its psychological functioning include: belief that others are driven by selfish motives (cynicism), expectation that people are frequent source of mistreatment (mistrust), and interpreting others'

actions as involving aggressive intent (hostile attributional style)(Smith et al. 2004). Several studies have suggested that hostility is a risk factor for all-cause mortality (Smith 1992) and is associated with lower quality of life. It is also negatively related to social support. This maladaptive pattern of functioning is associated with higher stress, lower health and lower sleep quality. Cynical hostility can also undermine professional development (Stavrova & Ehlebraht 2015). Neuroendocrine and cardiovascular responses to stressors are arguably exaggerated. In the situation of self-disclosure hostile people exhibit higher natural killer cell activity (i.e. cytotoxicity) (Chistensen et al. 1996). This suggests that due to lack of trust hostile people react in an acutely stressful way in situations of self-disclosure. Cynical individuals also report more conflicts, measured subjectively and objectively. All this may have a negative effect on the process of education as it is based on the relationships between students and teachers as well as students and their peers. What is more, recent study showed that ineffective coping strategies such as reduced use of emotional social support and positive reframing, as well as frequent behavioral disengagement were positively related to hopelessness in female students (Atroszko et al. 2014).

There are many theoretical frameworks and theories of stress. One of the most common, universal and widely accepted definitions of stress was proposed and established by Lazarus and Folkman (1984). According to these authors, stress is a pattern of negative physiological states and psychological responses occurring in situations where individuals perceive threats to their wellbeing, which they may be unable to meet. Whether stressors are detrimental or not depends on how individuals appraise and interpret the stressors (Lazarus 1975). When a person considers them as a threat to wellbeing and feels unable to cope, distress occurs. Lazarus suggested that stress includes three main processes. Primary appraisal is the process of perceiving a threat to oneself. The process of bringing to mind a potential reaction to the threat is secondary appraisal. The process of executing that response is known as coping. In general, coping researchers agree that it is fundamental to comprehend how people differ in responses to potentially threatening situations. Individuals tend to present various coping strategies, some of them seem adaptive, meanwhile others are possibly maladaptive and dysfunctional (Carver & Scheier 1989; Skinner et al. 2003). Studies show that there is merit in investigating both aspects of coping (e.g. Bolger 1990).

Hostile persons generally report increased levels of perceived stress (Taylor et al. 2013). Irrational beliefs and escape-avoidance coping with anger were found to play a mediating role in the relationship between hostility and health (Vandervoort 2006). Lower social support is also associated with cynical hostility (Knox et al. 1998). This result suggest that due to lack of trust, hostile cynics will not use emotional nor instrumental social support to cope with stress. Positive reinterpretation can be possibly used in reducing one's hostility (Green & Murray 1975). Thus, it is hypothesised that hostile individuals do not use it as a stress coping method. Negative relationship between socioeconomic status and social distrust may suggest that cynical persons less often actively engage and plan solutions to their problems and life stresses which in long term results in their disadvantaged socioeconomic position. Possible association with religion as a stress reduction is incoherent, but there are some data indicating negative relationship with cynical hostility due to lack of purpose and meaning in life.

On the basis of previous research and theoretical frameworks, it is hypothesised that cynical hostility is positively associated with perceived stress (H1); cynical hostility is positively associated with ineffective coping strategies, especially disengagement from the stressful situation (H2); cynical hostility is negatively associated with effective coping strategies, especially searching for instrumental or emotional social support, planning, and positive reinterpreting of the situation (H3) and coping strategies are the mediating variable in the relationship between cynical hostility and perceived stress (H4).

2. Methods

Participants. Two hundred and forty four students took part in this study: 151 women (62%), 89 men (36%), 4 persons (2%) did not report gender. Their mean age was $M = 21.22$ years ($SD = 2.80$). These individuals were studying at the universities from Pomerania Region in Poland: the

University of Gdańsk, and Technical University of Koszalin. Students were from different faculties, courses of study, years and modes of study.

Measures. Cynical hostility was measured by *Cook Medley Hostility Inventory Brief,* developed on the basis of five items from *Cook-Medley Hostility Inventory* (Cook & Medley 1954). It is a tool widely used in large scale surveys concerning health and psychosocial functioning. The response alternatives range from completely disagree (1) to completely agree (6). It showed good validity and reliability in previous studies (Clarke et al. 2008). For the present sample the Cronbach's alpha reliability coefficient was .76.

Perceived stress was measured with *Perceived Stress Scale, PSS4* (Cohen et al. 1983) which is a brief and easy to administer measure of the degree to which situations in one's life are appraised as stressful. It has four items referring to the perceived stress during last month. The grading scale was: 0 (never), 1 (almost never), 2 (sometimes), 3 (fairly often), 4 (very often). For the present sample the Cronbach's alpha reliability coefficient was .79.

Stress coping was measured with *Brief COPE* (Carver 1997) which is a tool for testing adults, both healthy and sick. It consists of 28 statements about possible ways of operating in difficult situations with the response scale: 0 (I haven't been doing this at all), 1 ("I've been doing this a little bit"), 2 ("I've been doing this a medium amount"), 3 ("I've been doing this a lot). It measures fourteen strategies, with two items per one strategy. It is used frequently to measure dispositional coping, that is the typical ways of feeling and responding in situations of experiencing stress. It showed good validity and reliability in previous studies.

Procedure. Data collection used convenience sampling. Students were invited to participate anonymously in the study during lectures or classes. More than 90% of all present students agreed to do so. One hundred ninety eight (81.1%) participants filled in 'paper and pencil' questionnaires and forty six (18.9%) students completed online versions of the questionnaires. Participation in the study was anonymous and no monetary or other material rewards were offered.

Statistical analyses. Means, standard deviations, percentages and correlation coefficients were calculated. Multiple mediation analysis was performed in which cynical hostility was independent variable, stress coping strategies were mediators and perceived stress was dependent variable. Following the assumptions of the mediation analysis only variables for which "a" path was significant were entered as mediators in the model, and these included emotional and instrumental social support, disengagement, planning, reframing and religion. Bootstrap method with bias corrected 95% confidence intervals and 10,000 bootstrap samples was used. All statistical analyses were conducted in IBM SPSS 22 and IBM SPSS AMOS 22.

3. Results

Tab.1 presents mean scores, standard deviations and percentages for the study variables as well as their interrelationships. Fig.1 shows mediation model with standardized regression coefficients. Firstly, the results showed significant relationship between cynical hostility and perceived stress. Secondly, the results showed significant relationship between cynical hostility and emotional and instrumental social support, disengagement, planning, reframing, and religion. In the next step a model including cynical hostility as independent variable, these six stress coping strategies as potential mediators and perceived stress as dependent variable was tested. Mediation analysis showed that in the tested model searching for emotional support, disengagement and reframing were significant mediators, and the effect was largest for the emotional support. These three variables accounted for full mediation effect in the model. The model explained 29% (95% CI = 18% – 35%) of the variance in the perceived stress. Tab.2 shows direct and indirect effects with 95% confidence intervals. Tab.3 shows the unstandardized regression coefficients, the Student t test and p values for each path in the mediation model.

Tab.1. *Correlations of cynical hostility and experienced stress with stress coping strategies*

	M(SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Cynical hostility	19.02 (4.39)															
2. Perceived stress	10.53 (3.15)	.25**														
3. Self-distraction	3.48 (1.41)	.01	.14*													
4. Active	4.17 (1.25)	-.13	-.39**	-.10												
5. Denial	1.72 (1.52)	.02	.13*	.31**	-.07											
6. Using substances	1.78 (1.99)	.09	.19**	.15*	.03	.30**										
7. Emotional	3.79 (1.73)	-.42**	-.25**	.21**	.21**	.10	-.03									
8. Instrumental	3.80 (1.70)	-.36**	-.12	.25**	.19**	.11	.002	.78**								
9. Disengagement	1.54 (1.33)	.16*	.39**	.11	-.32**	.40**	.23**	-.06	.04							
10. Venting	3.33 (1.27)	-.07	.23**	.40**	-.05	.33**	.26**	.26**	.40**	.32**						
11. Reframing	3.31 (1.49)	-.26**	-.36**	.11	.27**	.12	.02	.34**	.32**	-.08	.09					
12. Planning	4.25 (1.31)	-.20**	-.31**	.005	.54**	-.19**	-.06	.30**	.27**	-.38**	.03	.32**				
13. Humor	2.30 (1.44)	-.02	-.18**	.14*	.11	.21**	.33**	.03	.03	.12	.05	.36**	.05			
14. Acceptance	3.69 (1.31)	-.06	-.23**	.14*	.27**	-.06	-.02	.26**	.22**	-.10	.07	.34**	.41**	.20**		
15. Religion	1.52 (1.85)	-.20**	-.05	-.006	-.05	.16*	.02	.11	.21**	.11	.14*	.17*	.02	.20**	.04	
16. Self-blame	3.12 (1.67)	-.12	.48**	.07	-.19**	.18**	.18**	-.08	-.008	.35**	.18**	-.24**	-.16*	-.11	-.13	.10

*p < .05; **p < .01

Tab. 2. Direct effects, indirect effects and 95-percent confidence interval in in particular mediation

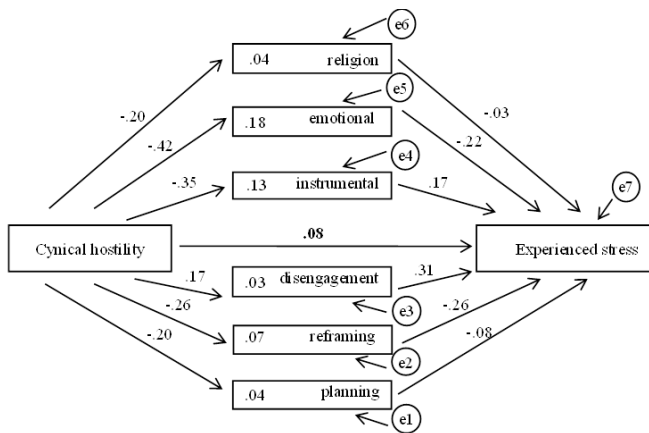| Independent variable	Mediator	Dependent variable	Direct effect	*95% CI*	Indirect effect	*95% CI*
Cynical hostility	-	Perceived stress	.05	.06 to .19	-	-
Cynical hostility	Religion	Perceived stress	-	-	.01	-.01 to .02
Cynical hostility	Emotional suport	Perceived stress	-	-	.07	.02 to .14
Cynical hostility	Instrumental suport	Perceived stress	-	-	-.05	-.10 to -.004
Cynical hostility	Disengegement	Perceived stress	-	-	.04	.01 to .07
Cynical hostility	Reframing	Perceived stress	-	-	.05	.02 to .10
Cynical hostility	Planning	Perceived stress	-	-	.01	-.004 to .04

Fig.1. Multiple mediation model in which cynical hostility was independent variable, stress coping strategies were mediators and perceived stress was dependant variable

Tab.3. The unstandardized regression coefficients, the Student t test and p values for each path in the mediation model

			B	t	p
Planning	←	Cynical hostility	- .06	-3.00	.003
Reframing	←	Cynical hostility	- .09	-4.08	< .001
Disengagement	←	Cynical hostility	.05	2.47	.013
Instrumental support	←	Cynical hostility	- .14	-5.80	< .001
Emotional support	←	Cynical hostility	- .16	-7.03	< .001
Religion	←	Cynical hostility	- .08	-2.94	.003
Perceived stress	←	Cynical hostility	.04	.91	.361
Perceived stress	←	Planning	- .19	-1.42	.157
Perceived stress	←	Reframing	- .56	-4.56	< .001
Perceived stress	←	Disengagement	.73	5.42	< .001
Perceived stress	←	Instrumental support	.32	2.93	.003
Perceived stress	←	Emotional support	- .40	-3.60	< .001
Perceived stress	←	Religion	- .06	-.60	.547

4. Discussion and conclusions

The results substantiated all of the hypotheses. Cynical hostility was associated with high levels of perceived stress, and stress coping. Cynical hostility was positively related to disengagement, which is ineffective coping strategy and negatively related to such effective coping strategies as searching for instrumental and emotional social support, planning, reframing, and turning to religion and spirituality. Furthermore, the tendency to disengage in stressful situations, limited searching for emotional social support and reframing were full mediators of the relationship between cynical hostility and the perceived stress. These results suggest that cynically hostile individuals have significantly limited abilities to use effective ways of stress coping, and this may directly contribute to deterioration of their health, relationships, social life and general functioning. The results are consistent with previous findings concerning relationship between cynical hostility and health and wellbeing and are expanding the understanding of this phenomenon.

The strongest association was found between cynical hostility and the lack of searching for emotional and instrumental social support. This may be especially relevant because social support is one of the strongest predictors of health and wellbeing. Due to high levels of distrust cynically

hostile people may have very serious difficulties in sharing their emotions and mental processes with others and they may feel highly uncomfortable in the situations of self-disclosure.

What is more, cynical hostility was positively related to disengagement which means that in the face of difficulties or disappointments highly cynical persons quit and resign from further trying to achieve their goals. When facing the threat of a probable failure, these individuals withdraw their previous commitment and effort. Individuals with high level of cynical hostility may prefer not to be responsible for the effects of their choices and daily activities. At the same time, cynically hostile people may blame their environment for every failure and they are not likely to admit their fault. Lack of achievements caused by this strategy of coping may have further impact on the development of negative attitudes towards other people and society in general, as well as on the development of a very grim and gloomy view of life. It may also be related to their lower socioeconomic status. The results suggest that cynically hostile individuals have problems with cognitively reframing the stressful situations in a constructive way. When painful or challenging events occur, they have limited ability to find positive aspects of the situation. It suggests that due to their pessimistic attitude, coping with stressors internally is much more difficult for them. They may perceive the aspects of a difficult situation as pointless and unpleasant. In addition, people with high level of cynical hostility do not look for support in religion and spirituality. Future studies should investigate whether it is because connecting with religious communities is unattractive for these individuals, and relating to other people in a meaningful way in this context is hindered by distrust or that they feel a basic deep distrust in life and consequently they are suspicious of any possible force that may be responsible for the way the world is functioning.

In conclusion, in terms of stress coping the results showed a congruent picture of a cynically hostile person who in the face of difficulties, problems and losses in life disengages from the situations, withdraws effort and limits planning of any solutions, does not search for any kind of emotional support, does not reinterpret situation in a way to learn from it and find positive aspects of the event, and what is more such person does not even seek comfort in religion or spirituality. From the perspective of the current knowledge of the psychology of health and wellbeing a hostile cynic is a person who in a way developed almost perfect combination of ineffective stress coping which makes him or her highly at risk of health problems and deteriorated quality of life. These individuals seem to be unable to notice ineffectiveness of their actions and also their insight into their emotional processes seems very limited. Even though the results do not seem to have optimistic implications, it is important to note that, according to previous studies, methods of stress coping can be taught and modified, practiced and shaped by external factors. Knowledge acquired through this study could help to develop interventions aimed at reducing cynical hostility through developing more effective stress coping strategies. This is especially important in the educational context for two main reasons. Firstly, the ineffective coping with the tendency to withdraw commitment and effort in the face of difficulties may have direct severe impact on educational outcomes for young people resulting in their feeling of hopelessness (Atroszko et al. 2014). Secondly, distrust and lack of searching for instrumental and emotional support may as well negatively influence the student-teacher relation which would furthermore impede the development of a young person. What is more, educational context is the perfect space to develop effective coping with stress in children and adolescents from early on. The role of teachers in this process should gain more attention and more studies are necessary to determine best conditions favoring effective development of the most adaptive stress coping strategies. The framework of unmet basic needs in educational context may prove to be useful in understanding the relationship between cynical hostility, stress coping and educational outcomes (Atroszko & Atroszko 2014).

As far as the Authors are aware, the present study is the first to investigate the mediating role of stress coping in the relationship between cynical hostility and perceived stress in the sample of university students. Valid and reliable measures were used in the study. Regarding the limitations, the sample is fairly small and not representative which limits the possibility of generalizing conclusions to the whole population of students in Poland. Additionally, self-report measures were used which increases the risk of common method bias. Future studies should overcome these limitations. Specific mechanisms explaining the relationship between cynical hostility and

ineffective coping should be investigated in order to determine whether distrust is the cause or the effect of ineffective way of dealing with everyday problems and the factors which are relevant in this context such as for example the generational transmission of beliefs and values.

5. Literature

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