

The Effectiveness of a Social Cognition Training Program on Moral Metacognition and Level of Empathy in Students

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Abstract

Aim: This research was conducted to determine the effectiveness of a social cognition training program on moral metacognition and empathy level among students. The current research was a quasi-experimental study with a pretest-posttest follow-up design and a control group. The statistical population included all male students in junior high schools of Khoy, Iran, in the academic year 2020-2021. Thirty students were selected by random cluster sampling and were then randomly assigned to experimental and control groups. The participants received training in a social cognition program over ten sessions, each lasting 60 minutes. Data collection tools included the Moral Metacognition Scale and the Basic Empathy Scale. The collected data were analyzed using repeated-measures ANOVA in SPSS version 26. The results showed that social cognition training led to an increase in the moral metacognition and empathy scores among the students in the experimental group compared to the controls.

Keywords: *Moral Metacognition, Empathy, Social Cognition Training program*

Introduction

Morality is an important and significant subject from an individual and social point of view. Experts have supported the inclusion of metacognition in individuals' understanding of the process of ethical decision-making and moral learning (Zawadzki, 2019). Moral metacognition plays a key role in the formation and guidance of moral behaviors and helps people make correct decisions and choose the morally good behavior in ethical conundrums. Nevertheless, mature moral functioning also depends on the integration of emotions, intuition, and empathy. Children with higher empathy show greater kindness and caring behaviors towards others and establish positive verbal interactions (Melloni, Lopez, & Ibanez, 2014). Social cognition training is one of the most recent interventions proposed to improve moral metacognition and the level of empathy. One of the basic principles of social cognition training is acquiring the ability to mentalize observed behaviors. A person will understand the behavior of others when he can attribute invisible mental states to them, such as emotions, thoughts and intentions (Gleichgerrcht, Torralva, Roca, Pose & Manes, 2011). The perception of emotion is also a component of social cognition that is related to how a person understands, predicts and explains his own and others' emotions (Harris, De Rosnay & Pons, 2016). Research has shown the impact of social cognition on moral judgment, moral growth and moral emotions (Mata, 2019). Considering the importance of social cognition in the moral and emotional development of adolescents, this research was conducted to answer the question of whether a social cognition training program is effective on moral metacognition and the level of empathy in students.

Methodology

The current research was a quasi-experimental study with a pretest-posttest follow-up design and a control group. The statistical population of this research included all the male students in the junior high schools of Khoy, Iran, in the academic year 2020-2021. Based on the objectives of the research, 30 students were selected by random cluster sampling and then randomly assigned to the experimental and control groups. The inclusion criteria were getting the informed consent of the student and the written consent of their parents, age range of 12 to 15 years, studying in either the seventh, eighth or ninth grades, male gender, and having suitable physical and mental condition for participating in the study based on the health records. The exclusion criteria were the student's unwillingness to continue cooperation, a history of childhood psychiatric disorders, a history of significant physical illness, and the use of psychiatric medications. The research tools included the Moral Metacognition Scale, consisting of 20 items with four components of metacognitive regulation, expressive cognitive knowledge, procedural cognitive knowledge and conditional cognitive knowledge, and also the Basic Empathy Scale, consisting of 18 items and two subscales, namely emotional and cognitive empathy subscales. The intervention program consisted of training in social cognition and was developed by Pajouhinia et al. (2019) based on the principles and concepts of the social cognition theory (the components of theory of mind and facial emotion recognition). This educational program was implemented in ten 60-minute sessions. To comply with the ethics of research, all the participants completed a written consent to participate in the study and were briefed on the confidentiality of their information, the absence of any physical and psychological harm, and participation in the study being free of charge. The collected data were analyzed using the repeated-measures ANOVA in SPSS version 26.

Results

In this research, the mean age was 13.20 years in the experimental group, 13.80 in the control group, and 13.50 overall. Also, 33.3% of the subjects were in the seventh grade, 43.3% in the eighth grade, and 23.3% in the ninth grade. The descriptive indices showed that the mean posttest and follow-up scores of the participants had changed in the experimental group compared to the pretest in both moral metacognition along with its dimensions (metacognitive regulation, expressive cognitive knowledge, procedural cognitive knowledge and conditional cognitive knowledge) and the level of empathy along with its dimensions (emotional and cognitive), but in the control group, there were no noticeable changes. The results of the Shapiro-Wilk test also indicated the normality of the data distribution for the research variables in the pretest, posttest and follow-up stages.

Table 1. The interaction effects for moral metacognition and empathy and their related dimensions

Variables	Source	SS	DF	MS	F	Sig.	Effect Size
Metacognitive regulation	Factor*group	40.95	1.62	25.26	12.78	0.0001	0.313
Expressive knowledge	Factor*group	37.26	1.95	19.10	20.54	0.0001	0.423
Procedural knowledge	Factor*group	29.35	1.65	17.75	12.41	0.001	0.307
Conditional knowledge	Factor*group	22.75	1.86	12.18	7.52	0.002	0.212
Moral metacognition	Factor*group	236.28	1.56	151.04	17.47	0.001	0.384
Emotional empathy	Factor*group	45.80	1.82	25.10	15.06	0.0001	0.350
Cognitive empathy	Factor*group	38.42	1.44	26.62	10.49	0.001	0.273
Empathy	Factor*group	133.26	66.63	2	18.63	0.001	0.400

As can be seen in Table (1), the interaction effects of group and factor were significant for moral metacognition and its dimensions, including metacognitive regulation, expressive knowledge, procedural knowledge and conditional knowledge, and also for the level of empathy and its dimensions, including emotional and cognitive

empathy ($P \leq 0.05$). Therefore, a significant difference can be observed in the mean scores of moral metacognitions and its dimensions (metacognitive regulation, expressive knowledge, procedural knowledge and conditional knowledge) and the level of empathy and its dimensions (emotional empathy and cognitive empathy) among the time points of pretest, posttest and follow-up for each variable. The results of Bonferroni's pairwise comparison showed that social cognition training had a significant effect on increasing moral metacognition and the dimensions of metacognitive regulation, expressive cognitive knowledge, procedural cognitive knowledge, and conditional cognitive knowledge in the posttest and follow-up stages compared to the pretest, and this increase persisted in the follow-up as well. Also, social cognition training had a significant effect on increasing empathy (emotional and cognitive) in the posttest and follow-up stages compared to the pretest, and this increase persisted in the follow-up stage, as well.

Discussion and conclusion

The present findings showed that training in the social cognition program increased the scores of moral metacognitions and its dimensions, including metacognitive regulation, expressive cognitive knowledge, procedural cognitive knowledge, and conditional cognitive knowledge, in the experimental group. This finding is in line with the results reported by Zawidzki (2019) and Gleichgerrcht et al. (2011). Social cognition training teaches the individual to understand the mental states and emotions of others, put himself in another person's shoes and look at the world from another person's point of view (Özyurt et al. 2024). Therefore, teaching social cognition from such a perspective can alter students' moral metacognition. Another finding of this study was that social cognition training increased the score of empathy and its dimensions, including emotional and cognitive empathy, in the experimental group. This finding is in line with the results reported by Pericle et al. (2018) and Rezaei (2020). In explaining this finding, it can be argued that social cognition equips the individual with two skills. First, it enables him to guess the mental state of others through mind reading and thus facilitates empathy with others. Second, theory of mind functions enable him to show effective empathic responses to others. Therefore, social cognition can be regarded as one of the basic abilities for creating empathy (Pericle et al., 2018).

The limitations of this research include the single gender of the statistical sample and the use of a self-report questionnaire to collect the data. Given the effectiveness of social cognition training, such programs are recommended to be applied in child counseling centers.

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