Self-esteem, study skills, self-concept, social support, psychological distress, and coping mechanism effects on test anxiety and academic performance

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Abstract

The purpose of this article is to assess the association of test anxiety and academic performance with study skills, coping mechanism, self-concept, self-esteem, and psychological distress among university and high school students. A series of validated measures were administered to 284 Kosovar students, most of whom were in college (60.3%). Being in college and social support resulted as protective factors for test anxiety. Better study skills, self-concept, and psychological distress were indicative of higher test anxiety. Higher levels of self-esteem were associated with higher student success. Practical implications and research future directions have also been discussed.

Keywords

academic performance, distress, self-concept, self-esteem, support, test anxiety

Introduction

While anxiety disorders have been reported to be present in almost all cultures (Demyttenaere et al., 2004), global research studies show that one of the most common anxiety types present and rising among students is test anxiety (Sarason and Sarason, 1990). Considered as one of the most important problems faced by students worldwide (Khosravi and Bigdeli, 2008 cited in Sharif et al., 2013), test anxiety has been demonstrated to have an inverse relationship with academic performance, is present in both genders (Sowa and LaFleur, 1986), and in both younger and older age groups (Cassady and Johnson, 2002). Furthermore, test anxiety is the one academic emotion extensively researched in comparison with other academic emotions of students (Pekrun et al., 2002).

Although test anxiety has been demonstrated to be present in numerous cultures, cross-cultural differences in test anxiety have also been observed (Seipp and Schwarzer, 1996). Therefore, researchers believe that culture itself has an impact on behavior and that with increased globalization influencing individual cultures, the need for understanding individuals as "embedded" in their families and cultural context has become very relevant (Szapocznik

and Kurtines, 1993). However, though the concept of test anxiety is widely researched around the globe, there is limited research through which levels of anxiety and other factors influencing academic performance among students have been measured within the Southeastern Europe Countries, including Kosovo (Duraku, 2017; Mustafa et al., 2015).

Previously conducted studies show that student academic achievements are being investigated extensively, and several factors have emerged as critical to student academic success (Rosado, 2013). Moreover, several findings from the existing conducted studies suggest that academic success is associated with student test anxiety level (Cohen et al., 2008; Hembree, 1988; Seipp, 1991; Zeidner, 1998), student study skills (Ayesha and Khurshid, 2013; Congos, 2010; Ergene, 2011; Numan and Hasan,

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2017), self-concept (Rosen et al., 2010), and self-esteem (Alam, 2013; Arshad et al., 2015; Wigfield et al., 1991). Other studies also have shown that students' academic performance and their level of test anxiety is associated with the level of social support students receive, their coping mechanisms (Auerbach and Gramling, 1997 cited in Aysan et al., 2001), and levels of psychological distress (Bayram and Bilgel, 2008).

According to Pekrun et al. (2002), students experience a great variety of self-referenced, task-related, and social emotions in academic settings. The effect of academic learning and academic achievement is pivotal in every aspect of life, starting from social relations, academic careers, and ability to allocate recourses due to the fact that all the above-mentioned aspects depend on individual achievement. Furthermore, the influence of emotions on students' cognitive processes and performance has been suggested to be associated with students' psychological and physical health as well (Pekrun et al., 2002: 92).

Test anxiety is considered a multifactorial construct and is defined as "the set of phenomenological, physiological & behavioral responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situations" (Zeidner, 1998: 17 cited in Chapell et al., 2005). Findings from the previously conducted studies have also shown that test anxiety is associated with lower academic performance among students (Hembree, 1988; Seipp, 1991; Zeidner, 1998). Specifically, "test anxiety has shown to reduce the working memory resources, leading to an impairment of performance at complex or difficult tasks that draw on these resources" (Pekrun et al., 2002: 96).

Existing literature within the field has also pointed out that though theories of test anxiety, like interference model, deficits model, and information processing model do provide insight regarding the whole process of impact that test anxiety has on performance, many studies investigating test anxiety focus on the impact of emotionality and worry factors of test anxiety on performance (Hembree, 1988 cited in Bodas and Ollendick, 2005: 69). In this regard, the two main factors that impact test anxiety are considered worry and emotionality (Liebert and Morris, 1967). Whereas worry embodies the cognitive aspect of test anxiety, emotionality refers to the psychological changes that occur (cited in Cohen et al., 2008). Furthermore, according to Cohen et al. (2008), it is specifically the cognitive aspect of test anxiety and worrying that has shown to be strongly correlated with exam performance (Keogh et al., 2004). Moreover, according to Cassady and Johnson (2002), worry is associated with impairment through its association with concentration. Thus, to assess test anxiety, it is reasonable to measure cognitive worry items and to combine these items with self-assessed performance impairment items (Driscoll, 2007: 2).

However, other studies also concluded that test anxiety and academic achievement are influenced by student study skills, such as textbook reading, memory, time management, note-taking, test preparation, and concentration (Congos, 2010). In regard to study skills, time management is considered a study skill of students that affects student academic performance (Britton and Tesser, 1991; Macan et al., 1990); other studies found that other student studying skills, such as having effective study techniques, using different study methods, and having good language proficiency, are enhancing factors in learning (Hailikari et al., 2018: 6) and also affect student academic performance. Furthermore, additional research findings found a significant relationship between college GPA and the following study skills of students: information processing skills, ability to select main ideas, self-testing, motivation, and time management (Credé and Kuncel, 2008). Therefore, poor study habits have been found to predict lower grades (Ayesha and Khurshid, 2013; Congos, 2010; Ergene, 2011), as well as significant effect on their levels of test anxiety and consequently their academic achievement (Numan and Hasan, 2017).

Academic self-concept, defined as "a domain specific self-concept which explains the way the students perceived and conceptualize about their ability in academic settings" (Rosen et al., 2010), has been found to have a positive relation with academic achievements as well (Trautwein et al., 2006). Moreover, in a study conducted by Xu et al. (2005), all measured dimensions of self-concept, including general self-concept, academic self-concept, and English learning self-concept, were significantly related to test anxiety. Additional research findings indicate that a higher self-concept is directly related to greater academic achievement, and test anxiety and intrinsic motivation are significant mediators in the relationship between self-concept and academic achievement (Khalaila, 2015). Factors such as gender and course of study did not influence academic self-concept, but significant differences were found in academic self-concept with respect to academic self- appraisal (Kaur and Kumaran, 2016).

Self-esteem is identified as another predictor that contributes to academic performance and test anxiety and is defined as the evaluative segment of self-concept (Blascovich and Tomaka, 1991 cited in Sari et al., 2018: 2). Development of self-esteem is considered to be shaped by learning experiences, lived throughout life, and a dynamic process, and it encompasses individual perspectives and qualities of the self (Sari et al., 2018).

Based on Alam (2013), students who reported to have higher self-esteem had higher academic performance compared with students who had lower self-esteem, and there was a negative relationship between test anxiety and self-esteem of students (Alam, 2013). Moreover, according to Arshad et al. (2015), there is a strong positive correlation between self-esteem and academic achievement among university students (Arshad et al., 2015: 161). However, there is controversial evidence regarding the role of self-esteem

of high school students, especially related to academic achievement; Booth and Gerard (2011) found that when societal expectations do not match with their actual performance, self-esteem may be affected. Therefore, culture and social context have also been found to be factors that interfere with interpretations of self-esteem (Tashakkori, 1993 cited in Booth and Gerard, 2011).

A significant positive relationship between psychological distress and test anxiety is documented by many other studies as well, which further explain that students who experience higher academic stress in most cases have higher levels of worry and emotionality scores and lower academic achievement (Harpell and Andrews, 2013; Rajiah et al., 2014; Rana and Mahmood, 2010). Psychological distress, known as psychological discomfort, is usually manifested through feelings of sadness, anxiety, distraction, and in the most extreme cases, psychotic symptoms, which can also be considered signs of psychological distress (Bayram and Bilgel, 2008). Moreover, psychological distress symptoms are also manifested through symptoms of depression, low levels of mastery, and low levels of life satisfaction, which also affect academic performance in school-aged children (Bhatia and Bhatia, 2007; Okagaki et al., 1996). Furthermore, a study conducted by Stallman (2010) found that among other factors, psychological distress was associated with lower academic achievement among university students as well (p. 249). However, social support was found to act as a protective factor for psychological distress among students (Brisset et al., 2010).

Furthermore, additional research has discovered gender and education level differences in regard to test anxiety. According to Chapell et al. (2005), there are gender differences in experiencing test anxiety regardless of their level of study. In comparing undergraduate and graduate students, female students reported experiencing higher test anxiety and higher GPAs than male students in both groups (Chapell et al., 2005). Furthermore, Pomerantz et al. (2002) reported that girls are more prone to global forms of distress—perceptions of global self-worth, anxiety, and depression, than specific forms of internal distress, such as perceptions of competence in school and worry over performance in school (p. 402).

Additional studies also indicate that there are numerous factors that can reduce levels of test anxiety and support students in addressing stressful situations. In this regard, coping strategies as actions to help students address stressful situations (Auerbach and Gramling, 1997 cited in Aysan et al., 2001) demonstrated to be very effective in overcoming and preventing test anxiety. Cohen et al. (2008) indicated that coping strategies are classified as problem-focused or emotion-focused, and this classification is determined based on the behavioral and cognitive efforts used to address stressful encounters (p. 290).

Furthermore, Kaiseler et al. (2009) listed problem-focused coping strategies (coping, seeking social support for instrumental reasons, planning, suppression of competing activities, and increasing effort) and five emotion-focused coping strategies (seeking social support for emotional reasons, humor, venting of emotion, self-blame, and wishful thinking) used by students (p. 729).

According to Cohen et al. (2008), coping strategies entail behavioral and cognitive efforts to address stressful encounters and are classified as problem-focused or emotion-focused. Kaiseler et al. (2009) describe that students using problem-focused coping strategies try to minimize distress by reducing or eliminating the stressor, whereas students using emotion-focused coping indulge in strategies used to regulate emotional arousal and distress (p. 728).

However, the influence of coping mechanism and the level of test anxiety has been found to differ among students of different aged groups. According to Aysan et al. (2001), younger students experience increased levels of anxiety compared to older students; however, this level of anxiety was attributed to the effectiveness of coping strategies that younger students use (p. 408).

An association of coping beyond test anxiety has also been noticed within psychological distress, or psychological discomfort, manifested through feelings of sadness, anxiety, distraction, and in the most extreme cases, psychotic symptoms, which can be signs of psychological distress (Bayram and Bilgel, 2008).

According to the findings of a research study conducted by Penley et al. (2002), coping, that is, emotion-focused, is positively correlated with psychological distress, whereas coping strategies that are more focused on problem-solving are weakly correlated with psychological distress (Ben-Zur, 2002).

Yet, similar to other countries, concerns regarding high school and university students' academic achievements and factors influencing their success are being raised in Kosovo. However, these issues are usually being raised among beneficiaries of the education system, high school or university students who are not satisfied with their success, evaluations or other academic factors, which are considered to be influencing their achievements or education satisfaction. Moreover, similar to other developing countries, in recent years, Kosovo has been facing difficulties in reforming the education system (Tahirsyzaj, 2010).

A recent study conducted by Mustafa et al. (2015) with students from Albania and Kosovo reported higher levels of anxiety among Kosovar students compared to students from Albania (Mustafa et al., 2015). Different levels of test anxiety that were higher among Kosovar graduate students compared to those of undergraduate students have also been reported previously (Duraku, 2017). Findings from other previous studies report higher risks of adverse mental health and dysfunction in young adulthood due to the post-war effect as well (Morina et al., 2011). However, there is no evidence regarding the factors associated with test

Table 1. Sample description.

	n	*%*
Gender		
Male	66	23.2
Female	217	76.4
School		
High school	100	39.7
College	152	60.3
Academic success (last semester)		
Weak	0	0
Passable	18	7.8
Good	117	50.9
Very good	60	26.1
Excellent	35	15.2
Age		
N	264	
Mean (years)	19.38	
SD (years)	3.19	

anxiety and students' academic success, and levels of test anxiety among younger students, especially those in high school levels. Therefore, this study aims to address the following research question: what association, if any, exists between test anxiety and academic performance by evaluating study skills, coping mechanism, self-concept, self-esteem, and psychological distress among Kosovar university and high school students.

In particular, understanding the emotions linked with academic performance can serve as basis for developing specific guidance on teaching and classroom instruction, designing educational environments in such ways that they foster students' psychological well-being, thus contributing to better academic outcomes (Pekrun et al., 2002), as well as prevent students from high levels of test anxiety, at their higher educational levels, by establishing mechanisms of support, which have already been demonstrated to be very effective in supporting students during their continuous education, on preventing from test anxiety (Auerbach and Gramling, 1997 cited in Aysan et al., 2001).

Furthermore, Walker and Epp (2010) argue that it is crucial to understand the level of support and opposition among key stakeholders when planning to implement and introduce a reform, as teachers in Kosovo undergo many trainings, seminars, and workshops, yet their performance leaves much room for improvement (p. 119).

Moreover, although the educational institutions in Kosovo continuously draft national strategies for improving the education quality, there is no evidence that scientifically proven strategies that affect student growth, their well-being, and their academic success have been measured and incorporated within the education curricula or considered while trying to improve the education system within the Kosovar context.

Methods

Sample and procedure

The sampling method applied in this study was convenience sampling. A total of 284 students participated in this study. Descriptions of the final sample are outlined in Table 1. As shown, over three-fourths of the sample were female (76.4%), and most were in college (60.3%); the remaining students were in high school (39.7%). The average age of participants was 19.38 years old (*SD* = 3.19). Prior to completing the survey, approval from the university and high school principals was obtained. All participants were informed of the purpose of the study and time demands. They were further informed that their responses would remain confidential and that their participation could be revoked at any time. For the high school students, consent forms were sent to the parents. Only those high school students who had parental approval participated in the survey. The surveys were administered during their evaluation periods or final exams. Data were collected during the months of May and June 2017, and all students provided informed consent to participate in this study. The time needed to complete the survey was approximately 45 minutes.

Measures

A series of validated measures were used to assess various factors that may contribute to test anxiety and academic success. Prior to conducting scale scores, reliability values were assessed using Cronbach's alpha, indicating sufficient internal consistency, all αs > .750. In addition to standardized measures, key demographics were also collected.

Test anxiety. Test anxiety was assessed using the Westside Test Anxiety Scale (Driscoll, 2007). This measure consists of 19 self-report items related to various aspects of test anxiety, including incapacity, worry, and physiological symptoms (i.e. the closer I am to a major exam, the harder it is for me to concentrate on the material). Scores were coded such that higher scores indicate a higher level of test anxiety. Observed reliability for the current sample was in the good range (α = .850).

Self-esteem. Self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which is a 10-item self-report scale that measures an individual's global sense of self-worth. Items are asked on a 4-point Likert-type scale, with higher scores indicating a higher self-esteem (i.e. I feel that I am a person of worth, at least on an equal plane with others). Reliability of this scale was observed in the good range (α = .816).

Study skills. Study skills were assessed using the Study Skill Checklist developed by the Cook Counseling Center at Virginia Tech (Cook Counseling Center at Virginia

Tech (CCCVT), 2016). This scale is a 21-item list consisting of yes/no questions, assessing how much individuals engage in particular study skills. Items fall into seven categories of study skills, including time scheduling, concentration, listening and note taking, reading (comprehension), exams, reading (speed), and writing skills. Example items include, spending too much time studying for what I am learning, my class notes are sometimes difficult to understand later, and I usually try to study with the radio or TV turned on.

Academic success. Academic success was assessed using self-reported descriptions of last semester's performance. Participants were asked to provide an overview of their performance on a scale ranging from Weak to Excellent on a 5-point scale.

Coping. Coping was assessed using the multidimensional coping scale developed by Stöber (2004). This scale assesses three domains of coping: Task Orientation and Preparation, Seeking Social Support, and Avoidance. Reliability for the current sample was acceptable ($\alpha = .750$).

Self-concept. Self-concept was assessed using the Self-Concept Clarity Scale (Campbell et al., 1996). This measure is a 12-point scale that assesses individuals' self-identified sense of self-concept (i.e. I spend a lot of time wondering about what kind of person I really am). Higher scores indicate that individuals perceive themselves as having a greater self-concept. Observed reliability for the current sample was in the acceptable range ($\alpha = .780$).

Psychological distress. Distress was measured using the Kessler Psychological Distress scale (Kessler et al., 2003), which is a 10-item self-report measure of global distress (i.e. during the last 30 days, about how often did you feel tired for no good reason). Questions are asked about distress experiences over the past 4 weeks, and each item ranges in severity form "none of the time" to "all of the time," with higher scores indicating a higher level of psychological distress. Observed reliability for the current sample was in the good range ($\alpha = .890$).

Analysis

Prior to conducting the primary analyses, preliminary and exploratory analyses were conducted to assess the state of the obtained data and to test the assumptions of parametric testing. There were no significant violations of assumptions. Preliminary analyses were also conducted to assess the simple (i.e. bivariate) relationships between variables to determine which, if any, were significantly associated and needed to be controlled for in the primary analyses. There were no significant relationships that needed to be controlled for.

Primary research questions were assessed using multiple linear regressions using all potential predictors. Two separate models were conducted to predict test anxiety and academic success. To create the most parsimonious model, non-significant predictors were removed from the models. The results presented below indicate the final regression model. All analyses were conducted in SPSS v.24, and significance was set at the .05 level.

Results

The final regression model predicting test anxiety is shown in Table 2. As indicated, the overall model was significant, $F(5, 220) = 11.15$, $p < .001$, $R^2 = .206$. Being in college compared to HS and social support was associated with lower test anxiety, *beta*s $= -0.141$ and -0.156, respectively, all ps $< .05$. Conversely, better study skills, self-concept, and psychological distress were indicative of higher test anxiety, *beta*s $= 0.201$, 0.151, and 0.277, respectively, all ps $< .05$.

The overall model predicting academic success was significant, $F(3, 192) = 53.96$, $p < .001$, $R^2 = .461$, and indicated a different set of predictors. Being in college compared to high school and higher levels of total psychological distress was associated with lower academic success, *beta*s $= -.603$ and $-.144$, ps $< .001$, respectively. Higher levels of self-esteem were associated with higher student success, *beta* $= .127$, $p < .05$, (see table 3).

Discussion

Consistent with prior research, the current research findings suggest that being in college compared to high school and having social support were all associated with lower test anxiety (Auerbach and Gramling, 1997 cited in Aysan et al., 2001; Cohen et al., 2008).

Moreover, better study skills (Hailikari et al., 2018; Kern et al., 1998), self-concept (Khalaila, 2015; Trautwein et al., 2006; Xu et al., 2005), and psychological distress (Bhatia and Bhatia, 2007; Okagaki et al., 1996) were indicative of higher test anxiety in this study, which is consistent with other previously conducted studies. In addition, higher levels of self-esteem were associated with higher student success, and this finding also echoes the results of prior studies in this field (Alam, 2013; Arshad et al., 2015).

The association of psychological distress and self-esteem with academic success and the level of study is significant. Similar to other previously conducted studies, these research findings find support that being in college compared to high school and experiencing higher levels of psychological distress were associated with lower academic success (Bhatia and Bhatia, 2007; Okagaki et al., 1996; Stallman, 2010), whereas higher levels of self-esteem were associated with better student success (Alam, 2013; Arshad et al., 2015; Blascovich and Tomaka, 1991).

Table 2. Summary of the regression models predicting test anxiety.

	Unstandardized		Standardized	
	β	SE	Beta	p
Constant	41.457	4.862		<.001
College (compared to high school)	−2.340	1.163	−0.141	.045
Social support	−0.244	0.099	−0.156	.015
Total psychological distress	−0.341	0.085	0.277	<.001
Study skills	0.486	0.163	0.201	.003
Self-concept	0.124	0.055	0.151	.025

SE: standard error.
Model summary: $F(5, 220) = 11.15$, $p < .001$, $R^2 = .206$.

Table 3. Summary of the regression model predicting academic success.

	Unstandardized		Standardized	
	β	SE	Beta	p
Constant	2.790	0.351		<.001
College (compared to high school)	−1.033	0.094	−0.603	<.001
Total psychological distress	0.020	0.008	−0.144	.011
Self-esteem	0.012	0.005	0.127	.022

SE: standard error.
Model summary: $F(3, 192) = 53.96$, $p < .001$, $R^2 = .461$.

The results can serve as a reference for policy makers, schools, teachers, and students to understand which personal and academic factors can influence students' learning and to adapt their teaching strategies or educational curricula to better support students' learning and overall well-being.

Moreover, it is shown that teachers can support their students in decreasing test anxiety, and they need to know how to help students develop a good understanding of their strengths and weakness; parents can help their children manage test anxiety by encouraging them to trust in their abilities for accomplishing various academic tasks (OECD, 2017). The results indicate that higher self-esteem is associated with better student success, thus using teaching methodologies that involve thorough teacher feedback may help students develop a greater sense of their own ability and feel better about their success (Booth and Gerard, 2011).

Furthermore, the results can aid in designing programs with direct practical implications in the well-being of students and their academic performance. Specific programs on coping strategy development would be highly beneficial for students in the beginning of puberty and would impact further development of the mental and emotional health of students (Aysan et al., 2001).

Test anxiety as a consequence of the abovementioned factors needs to be brought to the attention of decision-makers in the field of education, practitioners of the profession (educators, teachers, university professors, and all parts involved), so that interventions focused on test-anxiety can be introduced to students in primary school to aid in their behavior later in life (Aysan et al., 2001: 409).

Practical interventions focused on study techniques can be applied universally in schools and can reach all students, as both study techniques and study attitudes are unrelated to cognitive abilities and are only slightly related to specific personality constructs (Credé and Kuncel, 2008: 443).

Limitations and future research

This article has effectively summarized the relationships of self-esteem, study skills, self-concept, social support, psychological distress, and coping mechanisms with test anxiety and academic performance among high school and college students. This study, however, is not without its limitations. As noted, the current sample was predominately female. While this is consistent given the sampling setting, it does limit the ability to make generalizations to the experience of anxiety and outcomes among male students. Further studies with a more diverse sample may be helpful in addressing these limitations.

Another limitation of this study was the simplicity of the analytic process. Given that this is one of the first studies examining outcomes among a Kosovar population, we believe that the current findings are a good starting place. We hope that future research with larger samples will be able to provide more complex analytic approaches, such as mediation and moderation models, to help further understand the complex relationships that are likely happening.

Moreover, prior research has also suggested that test anxiety and academic performance are also associated with the volume of the projects students have to study, the forms of the evaluations (exams) they take, competitions between students, and course instructor characteristics (Fairbrother and Warn, 2003). Therefore, future research should focus on the association of test anxiety and academic performance with academic factors among the same population. As recommended by Credé and Kuncel (2008), future research should identify additional factors that might contribute to the development of effective study habits and attitudes (p. 443).

Future research and interventions focused on academic factors will help better understand the presented relationships and develop student-appropriate learning environments. Gjoshi and Kume (2014) argue that Kosovar students' well-being is influenced by the school environment and quality of learning (p. 342).

Furthermore, among the key factors that need to be further investigated and taken into consideration with regards to test anxiety and academic performance are gender differences (Chapell et al., 2005), cultural factors (Booth and Gerard, 2011) and intrinsic motivation (Khalaila, 2015). Therefore, taking into consideration that the contextual factors where learning takes place can have an influence on the student academic achievement and other related factors to their performance, including test anxiety, future research in the same cultural context should also design their research model, based on different theoretical perspectives. In this regard, from the previously conducted studies within the field, one of the most prominent approach in cross-cultural psychology is considered the ecological systems approach (Bronfenbrenner and Morris, 1998) which conceptualizes context as four interacting levels of environment: microsystem, mesosystem, exosystem, and macrosystem (Bodas and Ollendick, 2005). Through the ecological system approach, the interaction between students, processes, groups, and settings in a hierarchical order, as well as the relationship between context and behaviors can be further explained and examined (Bodas and Ollendick, 2005). Prior research conducted by Pomerantz et al. (2002) provided evidence that attention to girls' vulnerability should continue despite the fact that girls are doing well in school (p. 402). Intrinsic motivation is another crucial factor that can impact test anxiety and has been found to be a significant mediator in the relationship between self-concept and academic achievement (Khalaila, 2015).

Moreover, the effectiveness of educational leadership skills, as factors that enable students' success, also impacts self-efficacy of teachers and should be part of further research evaluating the school's impact on students' academic success. Specifically, transactional leadership attributes, contingent reward, and management by active exception have been found to be positively correlated with the self-efficacy of teachers (Hoxha and Duraku, 2017).

Data availability

Declaration of conflicting interests

Ethical approval

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Informed consent

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