

Religiosity and psychological well-being

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The aim of the present study was to investigate the relationship between religiosity and psychological well-being in a sample of Greek Orthodox Christians. Previous research has documented that personal devotion, participation in religious activities, and religious salience are positively associated with different criteria of psychological well-being. The sample (83 men and 280 women) with an age range from 18 to 48 years, was strongly skewed with respect to sex (77% female) and education level (95% were university students or university graduates). Religiosity was operationalized as church attendance, frequency of prayer and belief salience. In addition, a single item referring to beliefs about God was used. Depression, anxiety, loneliness, and general life satisfaction were selected as dependent variables because they reflect important dimensions of psychological well-being. Preliminary analyses showed that sex was significantly related to the three religiosity variables (church attendance, frequency of prayer, belief salience), with women being more religious than men. Consistent with previous research, correlations suggested that church attendance and belief salience were associated with better life satisfaction. The results of hierarchical regression analysis showed a significant positive association between anxiety and frequency of personal prayer. Finally, personal beliefs about God did not seem to relate to any of the psychological well-being measures. The results of the present study partially support the hypothesized association between religiosity and psychological well-being.

Le but de la présente étude était d'examiner la relation entre la religiosité et le bien-être psychologique auprès d'un échantillon de chrétiens grecs orthodoxes. Les écrits scientifiques antérieurs indiquent que la dévotion personnelle, la participation aux activités religieuses et l'affichage religieux sont positivement associés avec différents critères de bien-être psychologique. L'échantillon (83 hommes et 280 femmes), d'un âge variant entre 18 et 48 ans, était fortement biaisé en regard du sexe (77% de femmes) et du niveau d'éducation (95% étaient des étudiants universitaires ou des universitaires gradués). La religiosité était opérationnalisée en termes de fréquentation de l'église, de fréquence de prière et d'affichage des croyances. De plus, un seul item référant aux croyances envers Dieu était utilisé. La dépression, l'anxiété, la solitude et la satisfaction générale dans la vie ont été sélectionnés comme variables dépendantes parce qu'elles représentent des dimensions importantes du bien-être psychologique. Les analyses préliminaires ont montré que le sexe était significativement relié aux trois variables de religiosité (fréquentation de l'église, fréquence de prière et affichage des croyances), les femmes étant plus religieuses que les hommes. En accord avec les recherches antérieures, les corrélations ont suggéré que la fréquentation de l'église et l'affichage des croyances sont associés avec une meilleure satisfaction dans la vie. Les résultats d'une analyse de régression hiérarchique ont montré une association positive significative entre l'anxiété et la fréquence de la prière personnelle. Finalement, les croyances personnelles à propos de Dieu ne sont apparus être reliées à aucune des mesures de bien-être psychologique. Les résultats de la présente étude soutiennent partiellement l'hypothèse d'association entre la religiosité et le bien-être psychologique.

El objetivo del presente estudio fue investigar sobre la relación entre religiosidad y el bienestar psicológico en una muestra de los Cristianos Ortodoxos Griegos. La investigación anterior documentó que la devoción personal, participación en las actividades religiosas y la notabilidad están positivamente asociados con el bienestar psicológico. La muestra (83 hombres y 280 mujeres) con el rango de edad comprendido entre 18 y 48 años fue fuertemente sesgada en cuanto al sexo (77% de mujeres) y el nivel de educación (95% de los estudiantes o graduados universitarios). La religiosidad fue operacionalizada como atención a la iglesia, frecuencia con la que se reza y la notabilidad de las creencias. Adicionalmente, se utilizó un ítem referente a la creencia en Dios. La depresión, ansiedad, soledad y la satisfacción general de la vida fueron seleccionados como variables dependientes dado que reflejan importantes dimensiones del bienestar psicológico. Los análisis preliminares

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demonstraron que el sexo fue significativamente relacionado con las tres variables de religiosidad (atención a la iglesia, frecuencia con la que se reza y la notabilidad de las creencias) y que las mujeres son más religiosas que los hombres. En consistencia con la investigación anterior, las correlaciones sugieren que atender a la iglesia y la notabilidad de las creencias se asocian con mayor satisfacción de la vida. Los resultados de la regresión jerárquica demostraron una significativa asociación positiva entre la ansiedad y la frecuencia con la que se reza. Finalmente, las creencias personales sobre el Dios no parecen estar relacionadas con ninguna de las medidas del bienestar psicológico. Los resultados del presente estudio apoyan parcialmente la hipotética asociación entre la religiosidad y el bienestar psicológico.

Keywords: Religiosity; Belief salience; Church attendance; Life satisfaction; Psychological well-being.

Over the last decades a large and growing body of research has explored the associations between various aspects of religious involvement and a wide range of mental health outcomes such as depression, anxiety, and clinical diagnoses of various psychiatric disorders (Dyson, Cobb, & Foreman, 1997; George, Ellison, & Larson, 2002; George, Larson, Koenig, & McCullough, 2000; Mickley, Carson, & Soecken, 1995). Systematic reviews of this literature have consistently reported that aspects of religious involvement are associated with desirable mental health outcomes (Ellison & Levin, 1998; Swinton, 2001). Specifically, research shows that religiousness is positively associated with different criteria of psychological well-being (Beit-Hallahmi & Argyle, 1997; Diener, Suh, Lucas, & Smith, 1999; Ellison, 1998; Emmons, Cheung, & Tehrani, 1998; Koenig, 1997, 2001; Laurencelle, Abell, & Schwartz, 2002; Levin & Chatters, 1998), and a reduced likelihood of anxiety disorders (Koenig, Ford, George, Blazer, & Meador, 1993), depression (Harker, 2001; Levin, Markides, & Ray, 1996; Miller & Gur, 2002), and addictions (Francis, 1994; Gorsuch, 1993). The frequency of private religious activity such as prayer and Bible study has also shown positive associations with mental health outcomes (Helm, Hays, Flint, Koenig, & Blazer, 2000; Strawbridge, Shema, Cohen, & Kaplan, 2001). In a recent meta-analysis of 34 studies (Hackney & Sanders, 2003) examining the relation between religiousness and dimensions of well-being, such as life satisfaction and self-actualization, the researchers came to the conclusion that positive associations were lower for institutional religion and higher for personal devotion.

Not all studies, however, have demonstrated a positive impact of religiosity on well-being. For example, King and Schafer (1992) found that higher levels of religiosity were associated with personal distress. Bergin (1991), reviewing the extant literature, concluded that, in general, there

is “no correlation between religion and mental health” (Bergin, 1991, p. 399). However, he also suggested that the overall null relationship is a function of the fact that divergent orientations to religion are differentially correlated with psychological outcomes. Hackney and Sanders (2003) point out that the relationship between religiousness and mental health varies as a function of their operationalization. Therefore, the contradictory findings surrounding some of the research could be attributed to differences in the ways religion has been conceptualized and measured, but also to differences in the criteria of the mental well-being that have been examined by researchers.

Also relevant to the present study is the research on spirituality and well-being. Spirituality, as typically defined, encompasses a search for meaning, for unity, for connectedness, for transcendence (Pargament, 1997). This definition is consistent with a number of authors who, while acknowledging the diversity of meaning, affirm as a common core meaning of spirituality that of the recognition of a transcendent, meta-empirical dimension of reality (Koenig, 1997; Pargament & Park, 1995). In a recent meta-analysis (Sawatzky, Ratner, & Chiu, 2005) examining the association between spirituality and quality of life, the researchers concluded that despite the empirical support for a moderate relationship between the two constructs, the nature of the relationship remains ambiguous.

The way in which religion and spirituality might provide mental health benefits is under some debate, but it is likely that this occurs through a combination of mechanisms, including (1) increased social support, (2) expanded psychological recourses, (3) positive health practices, and (4) a stronger sense of coherence (George et al., 2002; Harrison et al., 2005).

Religiosity measures can focus either on religious involvement and behaviour or on religious attitudes and orientations. Both aspects appear to

hold different relations with mental health and well-being. Research to date has focused primarily on four dimensions of religious involvement: (1) public participation (attendance at religious services and related activities), (2) religious affiliation (major religious groups and/or specific denominations), (3) private religious practices (prayer, meditation etc.), and (4) religious coping (George et al., 2002). Although all four dimensions have been linked to positive health outcomes, two of them stand out in this regard. Attendance at religious services is most strongly related to physical health, mental health, and mortality in community-based samples (Ellison, 1995); and in studies of illness course and outcome, based on clinical samples, religious coping is the most powerful predictor of recovery and survival (Oxman, Freeman, & Manheimer, 1995; Pargament, 1997).

Up to now, most of the research examining the association between religiosity and mental health has been done among USA samples, in Protestant Christian contexts. Psychology's growing awareness of the sociocultural siting of behaviour has resulted in an interest in the relationship between religiosity and psychological well-being in different contexts (Simpson, 2002). Given that religiousness is anchored in some institutionalized system of beliefs and practice, the meaning of one's religiousness cannot be understood outside of the cumulative traditions in which it is established (de St Aubin, 1999).

The aim of the present study was to investigate the relationship between religiosity and psychological well-being in a sample of Greek Orthodox Christians. The Orthodox Church in Greece has acted as a secular political institution and as an ideological mechanism through the course of Modern Greek history. Religion and nationalism are so closely associated in Greece that one can refer to the Greek Orthodoxy as a "national religion" (Stavrakakis, 2002). Myths, symbols, and practices associated with Orthodoxy form an important part of the everyday lives of modern Greeks. The church is also linked with numerous cultural activities (e.g., open fairs to honour local Saints), customs (e.g., Good Week fast), and foods (e.g., the Easter lamb). All these show the penetration of the Orthodox culture into Greek public life.

In 1991, a Eurobarometer survey showed that 98.2% of the Greeks declared themselves to be members of the Orthodox Church (cited in Stavrakakis, 2002). This trend does not appear to vary significantly in younger generations, since a 2002 Eurobarometer survey showed that the Greek youth (15–24 years old) is the most religious

youth in Europe after that in Ireland (Vernadakis, 2002).

Based on the findings of previous studies, we hypothesized that Greek Orthodox participants who are more religious would reveal more satisfaction with their life and would be less psychologically distressed. Religiosity was defined as involvement in religious activities (church attendance, frequency of prayer) and belief salience. Outcome measures included satisfaction with life, and the absence of psychological distress (anxiety, depression, loneliness). We also included sex as an independent variable in our analyses because women are typically more religious than men (Beit-Hallami & Argyle, 1997).

METHOD

Participants and procedure

The sample included 363 respondents (83 men and 280 women). Ages ranged from 18 to 48 with a mean age of 24.6 years ($SD = 6.9$). The majority of the respondents (70.5%) were undergraduate university students solicited from undergraduate courses, and 24.2% were professionals in full-time employment recruited from teacher in-service training courses. The rest (5.3%) were either elementary (0.6%) or high school graduates (4.7%). One hundred and eighty-four subjects (50.7%) were staying in urban areas, with 179 (49.3%) in rural areas. Participants were asked to state their religious affiliation and all of them described themselves as being affiliated with a Greek Orthodox Christian religious background.

Participants completed the paper-and-pencil research materials in large groups. In order to maintain confidentiality, they were instructed not to include any identifying information with their completed research materials. Participation was voluntary.

Measures

Religiosity. In the present study, we examined religiosity as measured by three variables: participation in religious services, frequency of prayer, and belief salience. (1) Frequency of church attendance was assessed with the question: "How often do you usually attend religious services?" Responses ranged from 1 (*never*) to 5 (*more than once a week*). (2) Frequency of prayer was assessed with the question: "How often do you practise

personal prayer?" Available responses ranged from 1 (*never*) to 5 (*often*). (3) Belief salience was measured by asking participants to indicate their degree of interest in religion with the following question: "In general, how important is religion for you?" Response options to this question ranged from 1 (*not at all important*) to 5 (*very important*).

We also included a single-item measure referring to beliefs about God, based on the literature showing that the concept of God may influence a variety of mental and physical health variables such as self-esteem and well-being (Malony, 1998). Respondents were asked to indicate which of the three descriptions of God most closely reflected their own beliefs: (1) God is a living, personal being who is interested and involved in human lives and affairs; (2) God is an abstract and/or impersonal force in the universe; (3) I don't believe in God. According to their responses, participants were ascribed to one of three groups: those who believed in a personal God, those who believed in an impersonal force, and nonbelievers.

A single item was used to measure the strength of respondents' religious upbringing. Answers were given on a 5-point scale ranging from 1 (*none*) to 5 (*very strict*); 72.5% of the respondents stated that they had a flexible religious upbringing ($M = 2.96$, $SD = 0.55$).

Psychological well-being. General life satisfaction, depression, anxiety, and loneliness were selected as dependent variables because they reflect important dimensions of psychological well-being. The *Satisfaction with Life Scale* (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) measures general subjective well-being, with five items rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Summing these items provides a total score. The SWLS's validity is well documented (Diener et al., 1985). Diener et al. reported good SWLS reliability ($\alpha = .87$), and comparable

results were found for the current sample ($\alpha = .87$). The *Center for Epidemiological Studies Depression Scale* (CES-D; Radloff, 1977) is used to assess the frequency and duration of cognitive, affective, and behavioural symptoms associated with depression (e.g., crying spells, depressed mood, feeling of worthlessness). Its 20 items were rated on a 4-point scale (0 = *rarely or none of the time*, 3 = *most or all of the time*). The sum of these items provides a total score, with high values indicating high depression levels. In order to maintain consistency across measures in this study, we modified the CES-D time frame ("the last 7 days") to "in general". Alpha coefficient for this study was $\alpha = .87$. The *Beck Anxiety Inventory* (BAI; Beck & Steer, 1993) is a 21-item scale that measures the severity of self-reported anxiety in adults and adolescents. Respondents were asked to indicate generally how much they have been bothered by each symptom. The BAI total score is the sum of the ratings of 21 anxiety symptoms, which are rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*severely*), with high values indicating high anxiety levels. Alpha coefficient for this study was $\alpha = .87$. The *Revised UCLA Loneliness Scale* (R-ULS; Russell, Peplau, & Cutrona, 1980) conceptualizes loneliness as a unidimensional affective state. The scale consists of 20 items using a 4-point Likert scale (*never*, *rarely*, *sometimes*, and *often*), with a high score meaning increased loneliness. Participants were asked to state how they usually feel. Russell et al. report that the scale has high internal consistency in college student populations ($\alpha = .94$) and correlates highly with measures of depression and anxiety. Alpha coefficient in this study was $\alpha = .89$.

RESULTS

Religiosity and demographic variables

Only 13.8% of the sample stated that they attend religious services every week (11.3%) or more than

TABLE 1
Intercorrelations between the variables of the study

Variables	1	2	3	4	5	6	7
1. Belief salience							
2. Church attendance	.59**						
3. Frequency of prayer	.67**	.49**					
4. Anxiety	.08	.07	.17**				
5. Depression	-.01	.00	.02	.56**			
6. Loneliness	-.04	.02	-.03	.28**	.50**		
7. Life satisfaction	.12*	.16**	.10	-.14**	-.39**	-.41**	
8. Sex	.22**	.24**	.32**	.23**	.11*	.10	.05

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

once a week (2.5%). Most of the respondents (59.7%) reported attending services only a few times a year. Over 57% reported praying often, with nearly 18% stating either that they never pray (5%) or that they pray rarely (13%). Almost 78% of the respondents reported that religion was “important” or “very important” to them. The three religious variables (belief salience, church attendance, frequency of prayer) were fairly strongly related to one another (see Table 1).

Regarding beliefs about God, 46.1% of the subjects indicated that they believed in a personal God, 51.1% endorsed the statement of God as an impersonal force in the universe, and only 2.8% of the participants stated that they were nonbelievers. Univariate group comparisons (Kruskal-Wallis one-way analysis) and follow-up pairwise contrasts were used to examine differences between the three groups on each of the three religiosity measures. The three groups differed significantly in relation to church attendance, $\chi^2 = 55.82$, $df = 2$, $p < .001$, frequency of prayer, $\chi^2 = 45.31$, $df = 2$, $p < .001$, and belief salience, $\chi^2 = 6.37$, $df = 2$, $p < .001$. Post hoc Bonferonni pairwise comparisons revealed that those who either believed in a personal God or in an impersonal force reported higher scores on each of the three measures than did the group of nonbelievers. In addition, the personal God group reported higher scores on the three measures than did the impersonal force group. The personal God group of participants may be characterized as “spiritual” as they believe in a higher power but do not engage in religious practices to the same extent as the personal God group, whose beliefs seem more conventional (see Table 2).

A series of ordinal regression analyses were performed on belief salience, church attendance, frequency of prayer, and beliefs about God with the four demographic variables age, professional status (professionals vs students), sex, and region (urban vs rural) as predictors. Two commonly used link functions, logit link and cloglog link,

were chosen to build the ordinal regression models (McCullagh, 1980). The model assumption of parallel lines was not violated in any of the four models (chi-square values were not significant). In addition, the results of Pearson's chi-square test in each model indicated that the observed data were consistent with the estimated values in the fitted model ($ps > .05$). According to the Wald (χ^2) criterion, sex predicted church attendance, $\chi^2 = 21.68$, $df = 1$, $p < .001$, frequency of prayer, $\chi^2 = 23.15$, $df = 1$, $p < .001$, and belief salience, $\chi^2 = 13.48$, $df = 1$, $p < .001$. Men compared to women reported that they attended services less often (men: $M = 2.54$, $SD = 0.80$; women: $M = 2.96$, $SD = 0.70$), they prayed less frequently (men: $M = 2.94$, $SD = 1.30$; women: $M = 3.83$, $SD = 1.10$), and that religion was less important to them (men: $M = 3.58$, $SD = 1.20$; women: $M = 4.12$, $SD = .90$). Region predicted church attendance, $\chi^2 = 12.24$, $df = 1$, $p < .001$, and frequency of prayer, $\chi^2 = 6.92$, $df = 1$, $p < .01$. People living in urban areas reported less church attendance (rural: $M = 2.97$, $SD = 0.70$; urban: $M = 2.77$, $SD = 0.80$) and less frequent praying as compared to residents of rural areas (rural: $M = 3.73$, $SD = 1.10$; urban: $M = 3.55$, $SD = 1.30$). Professional status was related to frequency of prayer, $\chi^2 = 4.33$, $df = 1$, $p < .05$. Professionals reported praying less frequently as compared to students (professionals: $M = 3.43$, $SD = 1.20$; students: $M = 3.72$, $SD = 1.20$). Finally, the variable beliefs about God was predicted by professional status, $\chi^2 = 8.66$, $df = 1$, $p < .01$, and region, $\chi^2 = 16.25$, $df = 1$, $p < .001$. The probability of believing in a personal God was smaller for the professionals as compared to students and for the residents of urban areas as compared to the residents of rural areas.

Religiosity and psychological well-being

One-way ANOVAs were used to examine possible differences between the three groups holding

TABLE 2
Mean scores of the three groups endorsing different beliefs about God on the religiosity variables

	<i>Belief in a personal God</i>		<i>Belief in an impersonal force</i>		<i>Nonbelievers</i>		<i>Total</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Belief salience	4.43 _a	0.62	3.75 _b	1.01	1.70 _c	1.34	4.00	1.01
Church attendance	3.15 _a	0.72	2.66 _b	0.61	1.70 _c	0.82	2.86	0.74
Frequency of prayer	4.06 _a	0.92	3.39 _b	1.20	1.60 _c	1.07	3.65	1.18

Means in the same row that do not share subscripts differ at $p < .05$ in the Bonferonni pairwise comparison.

different concepts about God. The results indicated that there were no significant differences between the groups in relation to the four psychological well-being measures. The relationship between religiosity and measures of well-being (depression, anxiety, loneliness, and general life satisfaction) was initially examined by correlation statistics (see Table 1). The small but consistent associations between religiousness and well-being were further explored by hierarchical regression analyses with each of the psychological well-being measures regressed on sex and the religiosity measures (belief salience, church attendance, frequency of prayer). Sex was the only demographic variable chosen to be included in these analyses as it was the only one that correlated significantly with psychological well-being measures. Sex was entered in the first step and the three religiosity variables in the second step. Since all of the Variance Inflation Factor (VIF) levels were relatively low (the highest value was 2.18 for belief salience), we could assume that there was little multicollinearity among the predictor variables (Kleinbaum, Kupper, Muller, & Nizam, 1998).

In these four regression analysis, two effects of three religiosity measures were observed in addition to sex. The individuals who prayed more often were more anxious ($\beta = .16, p < .05$), and respondents who reported attending services more frequently expressed more life satisfaction ($\beta = .14, p < .05$).

In addition, the possibility of interactions between sex and religiousness were explored by MANOVAs, with the four well-being measures as dependent measures and sex and the three religiosity measures (median-split) as independent factors. The results showed that there were no significant interactions.

DISCUSSION

This study tried to expand existing literature on religion and psychological well-being by examining the relationship between these two constructs in a sample of Greek Orthodox Christians. The analyses suggested that only church attendance was associated with better life satisfaction. This finding is consistent with previous research (e.g., Diener & Clifton, 2002) showing that religious people are on average more satisfied with their life, and that religious attendance is associated with better physical and mental health and less depression (Strawbridge et al., 2001).

The results of hierarchical regression analysis showed a significant positive association between

frequency of prayer and anxiety. Although the available research on prayer and anxiety has yielded mixed results (Harris, Schoneman, & Carrera, 2005), some research findings indicate that prayer/meditation can suppress stress reactions regardless of the type of the prayer used (Maltby, Lewis, & Day, 1999; Wachholtz & Pargament, 2005). The stressor response model by Ellison and Levin (1998) assumes that stressors (e.g., chronic pain) prompt individuals to increase the frequency of their religious behaviours. Thus, the relationship between frequency of prayer and anxiety might mean that anxious people pray more often, using prayer as a stress buffer.

No association was found in this study between religious measures and depression and loneliness, although previous studies show that more frequent participation in religious activities is associated with less depression (Koenig, George, & Peterson, 1998; Smith, McCullough, & Poll, 2003). It may be that this lack of association is a result of the specific religiosity measures used. Similarly, personal beliefs about God did not seem to relate to psychological well-being measures, although it has been pointed out in the literature that the concept of God has important ramifications from a mental health standpoint. Therefore, the hypothesis that participants who are more religious would be less psychologically distressed was not supported.

Females were found to score significantly higher than males on the three religiosity measures (importance of religion, church attendance, and frequency of personal prayer). This finding confirmed the robust sex difference in religiousness found in previous studies (Beit-Hallami & Argyle, 1997; McCullough, Tsang, & Brion, 2003).

Limitations

First, our findings, being correlational, do not reveal causal connections; in order to draw such inferences, a prospective longitudinal design would be necessary. Second, religiousness has been defined in broad global terms. Global religious measures seem to be weaker predictors of well-being than religious measures linked to particular situations and contexts (Pargament, 2002). In addition, global religious measures are built on the assumption of an underlying stability in religiousness across time, context, and situations. There is evidence, however, that religious life changes over time and circumstances. Furthermore, our measures of religiosity were

limited in the sense that they were single-item measures.

Third, the nature of the sample renders it unrepresentative of the general population. The present sample consisted primarily of university students and well-educated individuals. As research shows that the religious beliefs and practices of well-educated people differ from those of the general public, further investigation with more heterogeneous samples is needed.

Conclusions

In conclusion, our findings add to a growing body of research showing that people's religious involvement is less central to their well-being than their underlying attitudes and orientations (Dezutter, Soenens, & Hutsebaut, 2006; Francis, Robbins, Lewis, Quigley, & Wheeler, 2004). According to Francis et al., religious attitudes and orientations represent deeper-rooted predispositions that are less contaminated with contextual factors, and which are more indicative of a person's general functioning than the relatively surface aspects of religious involvement.

It is also possible that ethnic and cultural factors might have played a role in our findings. Much of the research showing links between religion and well-being was carried out in the United States, and there is evidence that, on average, Americans are more religious than people from many other Western countries. It might also be that although religion is deeply ingrained in the Greek milieu, the legal and political position of the Greek Orthodox Church, and its recent involvement in public affairs, may have resulted in emphasizing its secular and political aspect more than its spiritual one.

In addition, the effects of religiousness on well-being might well be indirect. It has been proposed that a stress process model that would account for religious effects, highlighting the ability of religion to buffer against or reduce stressors, bolster social networks and support, and improve self-esteem and adaptive problem-solving efforts, is the answer (Ellison, Boardman, Williams, & Jackson, 2001; Nooney, 2005).

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