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THE ROLE OF RELIGIOSITY IN COPING WITH INFERTILITY TREATMENT

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SUMMARY

Background: *To analyze relationship between religiosity and psychological distress in woman undergoing in vitro fertilization.*

Subjects and methods: *The study was based on 103 woman engaged in a fertility treatment with in vitro fertilization. The questionnaires (Religiosity Questionnaire, Clinical Outcomes in Routine Evaluation – Outcome Measure, and socio-demographic questionnaire) were administered by investigators.*

Results: *The results suggest that the level of religiosity significantly differs participants in terms of problems (F=1.92, p=0.01), functioning (F=1.79, p=0.03), risk behaviors (F=3.02, p=0.00), anxiety (F=1.72, p=0.03) and physical problems (F=1.82, p=0.02). There were no significant differences in subjective wellbeing, depression and traumatization according to religiosity.*

Conclusion: *Results of a present study point out that religiosity could be considered as a protective factor for psychological distress.*

Key words: *in vitro fertilization – religiosity - psychological distress*

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INTRODUCTION

Recognized as a global public health issue, infertility is defined as the inability of a sexually active, non-contracepting couple to achieve pregnancy in one year (WHO 2010) and it is estimated to affect between 8 and 15% of reproductive-aged couples worldwide (Datta et al. 2016, Inhorn & Patrizio 2015, Vander Borght & Wyns 2018). Infertility diagnosis and treatment appears to be inevitably associated with stress for most couples unable to conceive (Kee et al. 2000, Patel et al. 2016). Moreover, women coping with infertility have been found to have greater levels of anxiety and depression (Friščić & Kušević 2013, Joelsson et al. 2017, Massarotti et al. 2019), feeling of being stigmatized and viewed as abnormal (Whiteford & Gonzalez 1995, Slade et al. 2007), guilt, feeling of pessimism (Nicoloro-Santabarbara et al. 2017) and even suicidal tendency (Cousineau & Domar 2007, Ramamurthi et al. 2016). Considering severe strains on their emotional resources, they are likely to use coping strategies – a way of controlling and regulating stress (Lazarus & Folkman 1984) at some point during the experience, with primary purpose to manage the emotional and behavioral reactions experienced once a diagnosis of infertility is given (Peterson et al. 2006). Most common coping strategies among women engaged in fertility treatment were engaging in household activities and hobbies (Ramamurthi et al. 2016), investing in the quality of their own life, hobbies, work and relationship, involving in caring activities and taking an active interest in the children of friends and relatives when it comes to woman with long-term experience of unsuccessful infertility treatment (Wirtberg et al. 2006). On the other hand, confrontative coping, seeking social support and escape or avoidance were also common (Peterson et al. 2006). Those results suggest the need for psychological counseling to all women with infertility taking treatment along with family members (Ramamurthi et al. 2016). Recently, infertility counseling has become a special form of counseling requiring professional expertise and qualification. Infertility counseling enables analyzing concerns related to the experience and treatment of infertility such as feelings of sadness, guilt and anxiety, self-esteem and body-image, coping mechanisms as well as social implications, as well as sharing emotional impact of infertility and strategies helpful for dealing with specific feelings and concerns with others through groups counseling (Van den Broeck 2010). Those needs are evident in another common way of coping with infertility diagnosis and treatment – religious behavior (Ramamurthi et al. 2016), which has been generally associated with subjective wellbeing, better mental and physical health and lower psychological distress (Dilmaghani 2018, Joshi et al. 2008). Although relation of religiosity to infertility is complex due to association of religiosity with beliefs that can hinder medical helpseeking (Greil et al. 2010), studies have shown that spirituality and religion are important factors in the experience of many individuals facing problems with fertility (Kim et al. 2016), and religious beliefs and behaviours were associated with adaptive problem-solving coping style among infertile couples (Grinstein-Cohen et al. 2017).

The aim of the present study was to investigate the association between religiosity and psychological distress among women referred to a fertility treatment with in vitro fertilization.

SUBJECTS AND METHODS

The study was conducted at the Department of Gynaecology and Obstetrics, Petrova Hospital, University Hospital Center Zagreb, Croatia, with women who were referred to a fertility treatment with in vitro fertilization. All the patients involved in this study were previously diagnosed with infertility, and the individual testing was conducted at the beginning of fertility treatment. Ethical approvals were received from the Ethical committee of the University Hospital Centre Zagreb, the Ethical committee of the Department of Gynaecology and Obstetrics, Petrova Hospital, University Hospital Center Zagreb, and the Central Ethics Committee of the University of Zagreb, School of Medicine. Participants were informed about the scope and the purpose of the study, they were assured that the collected data would be used only for the purpose of the study and they signed informed consent. All the questionnaires were administered by the researchers: socio-demographic questionnaire, Religiosity questionnaire and Clinical Outcomes in Routine Evaluation – Outcome Measure.

Religiosity questionnaire (Ljubotina 2004) consists of 24 items grouped in three subscales which refers to religiosity in general, unrelated to a certain religion. Each subscale (dimension) consists of eight items. Dimension of religious beliefs is assessed by items indicating cognitions, emotions, beliefs and experiences related to religion, e.g. *Religion gives a full meaning to my life*. Dimension of ritual aspect refers to practice of traditional rituals, e.g.: *I regularly visit the church, or temple of God*. Dimension of social aspect refers to applying the principles of religion in everyday life and activities that are not necessarily related to religious rituals, e.g.: *Youth should be raised in the spirit of religion*. Participants' responses are expressed on the Likert scale from 0 to 3, so that the range of results on individual subscales ranges from 0 to 24 and 72 for the questionnaire in general.

Clinical Outcomes in Routine Evaluation – Outcome Measure is a 34-item self-report instrument, a measure of general psychological distress, including more specific domains in which this distress is present: subjective well-being, problem, function, and risk (Evans et al. 2002). The Problem domain comprises items reflecting depression, anxiety, physical problems and trauma (Barkham et al. 2005). This instrument has good internal and test–retest reliability, as well as convergent validity with various other instruments, with large differences between clinical and non-clinical samples and good sensitivity to change (Evans et al. 2002, Jokić-Begić et al. 2014). Participants assess, on a 5-point scale, how they felt during the last two weeks. Based on the comparison between the representative sample from the general population results and those attending psychological treatment, as well as the range of the total score and individual dimensions (0 to 4), the authors suggest a critical value of 1.0, equally for men and women (Evans et al. 2002).

Data were collected from 103 female participants. The mean age was 34.2 years (SD=4.51 and age range 25-50 years). Seventy-three percent of participants were college graduates and 27% had a high school degree. Ninety-three percent of participants were employed. Eighty-three percent of women were married, while 17% lived in cohabitation with a partner. The mean duration of infertility among participants was 3 years and 9 months (SD = 2 years, 10 months), and the average number of treatment cycles they had experienced was 2 (SD=2.26). These parameters are listed in Table 1.

Table 1. Basic sociodemographic characteristics of the participants

Characteristic	N	%
Education		
Secondary school	27	23.1
College or University degree	76	76.9
Employment status		
Employed	98	95.1
Unemployed	5	4.9
Marital status		
Married	87	84.5
Cohabitation	16	15.5

Statistical analysis

Data were analysed with descriptive and analytical statistical methods using SPSS version 25.0 (SPSS Inc, Chicago, USA), with statistical significance set at $p<0.05$. Percentages were reported for categorical variables, while means and standard deviations were used for numerical variables. Pearson's correlation coefficients were determined, and the final stage of the analysis was performed using the analysis of variance (ANOVA), in order to examine the differences in psychological distress considering level of religiosity.

RESULTS

Dimensions of psychological distress were reported as follows: the mean score for subjective wellbeing was 2.88 (SD=0.84), the mean problems/symptoms value was 1.39 (SD=1.03), risk behaviors M=0.28, SD=0.62, depression M=1.19, SD=0.94, anxiety M=1.58, SD=1.37, physical problems M=0.98, SD=0.79 and trauma was M=1.18, SD=1.04 (Table 2).

The mean score for religiosity was M=1.74 (SD=0.88). The highest result on specific dimensions were noted for dimension of religious beliefs (M=1.81, SD=0.77). The mean score for dimension of ritual aspect was M=1.08 (SD=0.45) and for social aspect M=1.56 (SD=0.59, Table 3).

Table 2. CORE-OM values

	N	Min.	Max.	M	Std
Subjective wellbeing	103	0.75	5.00	2.88	0.84
Problems/symptoms	103	0.00	5.17	1.39	1.03
Functioning	103	1.83	5.00	3.25	0.58
Risk behaviors	103	0.00	5.00	0.28	0.62
Depression	103	0.00	4.80	1.19	0.94
Anxiety	103	0.00	11.00	1.58	1.37
Physical problems	103	0.00	5.00	0.98	0.79
Trauma	103	0.00	5.00	1.18	1.04

Table 3. Religiosity questionnaire values

	N	Min.	Max.	M	Std
Religiosity	103	0.00	3.00	1.74	0.88
Religious beliefs	103	0.00	3.00	1.81	0.77
Ritual aspect	103	0.25	3.00	1.08	0.45
Social aspect	103	0.13	3.00	1.56	0.59

Table 4. Psychological distress according to religiosity

		Sum of Squares	df	Mean Square	F	Significance
Subjective wellbeing	Between Groups	43.286	49	0.883	1.518	0.078
	Within Groups	26.774	46	0.582		
	Total	70.060	95			
Problems	Between Groups	70.096	49	1.431	1.921	0.014*
	Within Groups	33.519	45	0.745		
	Total	103.615	94			
Functioning	Between Groups	22.091	49	0.451	1.790	0.026*
	Within Groups	11.081	44	0.252		
	Total	33.172	93			
Risk behaviors	Between Groups	29.454	49	0.601	3.021	0.000**
	Within Groups	9.153	46	0.199		
	Total	38.606	95			
Depression	Between Groups	45.987	48	0.958	1.070	0.409
	Within Groups	41.172	46	0.895		
	Total	87.160	94			
Anxiety	Between Groups	122.406	49	2.498	1.721	0.033*
	Within Groups	66.766	46	1.451		
	Total	189.171	95			
Physical problems	Between Groups	39.692	49	0.810	1.815	0.022*
	Within Groups	20.535	46	0.446		
	Total	60.227	95			
Traumatisation	Between Groups	64.444	49	1.315	1.557	0.068
	Within Groups	38.014	45	0.845		
	Total	102.458	94			

* $p<0.05$; ** $p<0.01$

ANOVA revealed that the level of religiosity significantly differs participants in terms of problems, functioning, risk behaviors, anxiety and physical problems (Table 4). Specifically, higher level of religiosity correlated to lower levels of dimensions of psychological distress mentioned above. There were no significant differences in subjective wellbeing, depression and traumatization according to religiosity.

DISCUSSION

The results of the present study indicate that the level of religiosity significantly differs participants in terms of problems, functioning, risk behaviors, anxiety and physical problems, but not in terms of subjective wellbeing, depression and traumatization, of which differences in the level of depression were mostly ex-

pected. One possible explanation of prevailing anxiety and lower levels of depression among participants could be that, according to the psychoanalytic theory, the cause of depression is a splitting relationship toward the lost object (Freud 1917). On the other hand, anxiety is an automatic response to traumatic situations that overwhelm the psyche with an excessive number of stimuli that can no longer be empowered or deteriorated, and dangerous situations where a person learns to anticipate danger before it becomes traumatic (Freud 1926). It is clear that dealing with diagnosis and therapy of infertility is more likely to result with reaction of anxiety, due to potentially dangerous, invasive or traumatic situations, while the sense of loss cannot be related to this situation.

The relationship between infertility treatment and religiosity is rather complex, considering the fact that technologies of assisted reproduction such as in vitro fertilization have been controversial on religious grounds since their inception (Roberts 2006). Although within majority of world's religions have made adjustments to facilitate the fertility of their adherents, Catholicism is the only major world religion that unequivocally condemns the use of IVF (Roberts 2006), and Catholicism is predominantly religion in Croatia (Zrinščak 2017). As well as in Croatia, the debate on IVF is important, heated and highly politicized subjects in other countries where religion is significant aspect of social life, such as Poland (Radkowska-Walkowicz 2018), Italy (Zanini 2019), Ireland (de Oliveira Alve et al. 2018) and United States (Allum et al. 2017). When public debate on IVF prevails ethical questions, like the one about donating of surplus frozen pre-embryos to research (Raz et al. 2016), it is reasonable to expect religious behavior to take precedence over active coping with infertility in terms of using a healthcare. Recently, one major study has confirmed it: women faced with infertility had prayed more often than ought medical treatment, read journal articles about infertility, or read books on infertility, and there was also a substantially larger percentage of women who consulted a spiritual leader as compared to a support group or a therapist or counselor (Kim et al. 2016). Contrary to that, some studies have revealed spirituality and religion as important factors in facing problems with fertility, associated with adaptive problem-solving coping style among infertile couples (Grinstein-Cohen et al. 2017). Women with infertility issues use religion to cope with their situation and that positive religious coping is associated with a reduction in distress and depressive symptoms in infertile women (Oti-Boadi & Asante 2017). Nearly one quarter of the women facing infertility reported becoming more religious since experiencing infertility (Domar et al 2005). While the results of the studies suggest a link between depressive symptoms and fertility distress in women undergoing infertility treatment, inverse correlation between spiritual well-being and depressive symptoms and fertility distress was also noted (Domar et al. 2005). Considering the fact that distressed patients may be less compliant, more difficult to work with and even more likely to terminate infertility treatment, it is advisable to encourage spirituality among patients.

Despite ethical issues emphasized by different religions, results of the present study suggest that religiosity should be considered as a protective factor for psychological distress. These findings confirmed some previous attempts to explain the positive role of religious beliefs and behaviors in coping with different life stressors, including infertility (Grinstein et al. 2017). Studies that examined the effects of religion-accommodative psychotherapy on depression or anxiety in comparison with a control group of secular psychotherapy revealed that, when compared with wait-list controls or non-equivalent active treatments, religion-accommodative psychotherapy was more effective, at least immediately after completing treatment. Results also indicate that religion-accommodative psychotherapy is at least as effective for treating depression and anxiety as secular forms of the same psychotherapy. In addition, religion-accommodative psychotherapy resulted in more reductions in anxiety than a secular form of psychotherapy (Paukert et al. 2011).

The present study suffers from several methodological limitations. The sample size was relatively small, thus raising the possibility of random error. In addition, there was a high rate of refusal to participate in the research, so a sample could be relatively biased in a context of psychological wellbeing, considering the fact that women who have effectively coped with infertility diagnosis and treatment were probably more likely to voluntarily participate in a research.

Further studies should investigate the role of official attitude of religion they belong towards IVF in experience of psychological distress of women engaged in IVF, according to the level in which religious beliefs and behaviors act as a coping mechanism in IVF process. Potential role of religious beliefs and behaviors in outcomes of IVG is also suggestable to investigate.

CONCLUSIONS

Higher level of religiosity correlated to lower levels of dimensions of psychological distress in dimensions of problems, functioning, risk behaviors, anxiety and physical problems. There were no significant differences in subjective wellbeing, depression and traumatization according to religiosity.

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Conflict of interest: *None to declare.*

Contribution of individual authors:

Dunja Jurić Vukelić: study design, data collection, statistical analysis;

Zorana Kušević: study design, first draft, approval of the final version, statistical analysis;

Bjanka Vuksan-Ćusa: study design, approval of the final version, statistical analysis.

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