



## Pastoral care and religious support as a part of treatment of religious patient with the severe form of osteoarthritis

Pastirska brigada i religiozna podrška kao deo lečenja religiozne bolesnice s teškim oblikom osteoartritisa

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### Abstract

**Introduction.** Religious needs of patients are consistently being neglected in the clinical medicine. Pastoral care is a religious support which a religious patient receives from priests, chaplains, imams, rabbis or other religious authorities. Religious support, in terms of clinical medicine, is a spiritual support which religious patients obtain from religious and trained medical workers. The aim of this report was to present the effects of pastoral care and religious support in hospital treatment of a 73-year-old patient with the severe form of osteoarthritis. **Case report.** The 73-year-old, highly religious patient with severe form of osteoarthritis was admitted at the Clinic for Physical Medicine and Rehabilitation, Military Medical Academy in Belgrade, due to heterogeneous problems in the activities of daily living. The patient walked with difficulty using a stick, suffered pain, and was anxious and depressive. In order to objectively demonstrate effects of both pastoral care and religious support in this patient we performed multiple treatment with reversal design, in which the basic treatment consisting of hospital care, pharmacotherapy and physical therapy (the treatment A) was alternatively changed with the treatment that included combination of the basic treatment and religious support provided by religious physiatrist and physiotherapist (the treatment B) or combination of the basic treatment and pastoral care provided by military priest (the treatment C). The treatment A was applied three times and lasted two weeks, every time. Treatments B and C were applied once and lasted three weeks, each. The order of the treatments was: A→B→A→C→A. During the whole treatment period the patient's condition was assessed by several measuring scale: the level of depression by The Hamilton Rang Scale

for Depression and The Zung Self Rating Depression Scale; the level of anxiety by The Zung Self Rating Anxiety Scale; the functional capability of patient by The Barthel Index and The Functional Independent Measure. Measuring was carried out on a daily basis. In statistical analysis two nonparametric statistic were used: the percentage of non-overlapping data (PND) and the percentage of data points exceeding the median (PEM). PND and PEM values below 0.7 reflect questionable effectiveness of the treatment. The values between 0.7 and 0.9 reflect moderate effects. The values above 0.9 are considered as a highly effective treatment. The anxiety of the patient was moderately to significantly reduced after introducing religious support (treatment B: mean and mean deviation = 50.1 ± 10.89; variability = 4.598653; mean shift = 0.219626; PND = 0.6; PEM = 0.9) and pastoral care (treatment C: mean and mean deviation = 53.5 ± 5.90; variability = 9.062591; mean shift = 0.207407; PND = 0.9; PEM = 0.9). The patient's depression was reduced after introducing pastoral care (treatment C: mean and mean deviation = 51.3 ± 4.66; variability = 10.99005; mean shift = 0.08881; PND = 0; PEM = 0.9). On the contrary, the patient's functional capability was not significantly improved. **Conclusion.** In the highly religious patient with severe osteoarthritis pastoral care and religious support, applied along with the standard medical treatment of this condition, produced some beneficial effects on anxiety and depressive mood, but with no significant effect on patient's functional capability.

### Key words:

physical and rehabilitation medicine; osteoarthritis; religion; pastoral care; aged; treatment outcome.

## Apstrakt

**Uvod.** Religiozne potrebe bolesnika stalno se zanemaruju u kliničkoj medicini. Pastirska briga je religiozna podrška koju religioznom bolesniku pružaju sveštenici, pastori, imami, rabini i ostali religiozni autoriteti. Religiozna podrška u smislu kliničke medicine, je duhovna podrška koju religioznom bolesniku pružaju religiozni i za to obučeni medicinski radnici. Cilj rada bio je da se prikažu efekti pastirske nege i religiozne podrške u sklopu bolničkog lečenja 73-godišnje bolesnice sa teškom formom osteoartritisa. **Prikaz bolesnika.** Veoma religiozna bolesnica, stara 73 godine, sa teškom formom osteoartritisa, primljena je na lečenje u Kliniku za fizikalnu medicinu i rehabilitaciju Vojnomedicinske akademije u Beogradu, zbog više problema koji su ometali njen svakodnevni život. Bolesnica se kretala otežano uz pomoć štapa, trpela je bolove i bila je anksiozna i depresivna. U cilju objektivnog sagledavanja efekata pastirske nege i religiozne podrške u lečenju ove bolesnice, sproveli smo multiplo obrtno lečenje koje se sastojalo od primene bazičnog tretmana (bolnička nega, terapija lekovima i fizikalna terapija), označenog kao tretman A, koji se naizmenično menjao sa tretmanom sastavljenim od bazičnog tretmana uz dodatak religiozne podrške koju su obazbeđivali verujući fizijatar i fizioterapeut (tretman B), odnosno bazičnog tretmana uz dodatak pastirske nege koju je pružao vojni sveštenik (tretman C). Bazični tretman bio je primenjen tri puta, svaki put u trajanju od po dve nedelje, a kombinovani tretmani sa religioznom, odnosno pastirskom podrškom, primenjivani su jedanput, po tri nedelje svaki. Redosled primenjenih tretmana bio je sledeći: A→B→A→C→A. Glavna obeležja pos-

matranja i merne skale bili su: nivo depresije meren Hamiltonovom skalom depresije i Cungovom skalom depresije; nivo anksioznosti, Cungovom skalom anksioznosti, a funkcionalna sposobnost bolesnika merena je indeksom Bartel i Merom funkcionalne nezavisnosti. Merenja su vršena svaki dan. U statističkoj obradi podataka korišćene su dve neparametrijske metode za kvantitativnu obradu podataka: procenat tačaka koje se ne preklapaju – (*percentage of non-overlapping data* – PND) i procenat tačaka koje prelaze nivo medijane (*percentage of data points exceeding the median* – PEM). Vrednosti PND i PEM između 0,7 i 0,9 govore o zadovoljavajućem efektu lečenja. Vrednosti od 0,9 i više govore o značajnom efektu lečenja. Uvođenjem religiozne podrške u lečenje, smanjenje anksioznosti bilo je umereno do značajno tretman (B);  $\bar{x} \pm SD = 50,1 \pm 10,89$ ; varijabilnost = 4,598653; srednji pomak = 0.219626; PND = 0,6, PEM = 0,9). Depresija bolesnice značajno se smanjila samo nakon uvođenja pastirske brige i samo prema jednoj statistici (PEM = 0,9). Nasuprot ovome, nije došlo do poboljšanja funkcionalne sposobnosti bolesnice. **Zaključak.** Kod visoko religiozne bolesnice sa teškom formom osteoartritisa, pastirska nega i religiozna podrška, primenjeni u sklopu standardnog medicinskog lečenja tog stanja, ispoljili su određene povoljne efekte na anksioznost i depresivno raspoloženje, ali bez značajnijeg poboljšanja funkcionalne sposobnosti bolesnice.

**Ključne reči:** medicina fizikalna i rehabilitacija; osteoarthritis; religija; pastoralna briga; stare osobe; lečenje, ishod.

## Introduction

Could we start with a rhyme? Religion and medicine – this look is broad – today are not on the same road. Religious needs of patients are consistently neglected in clinical medicine<sup>1</sup>. Religion is belief in the absolute power. A believer has an experience with this power. He or she knows historical shapes of this experience. This experience has an extraordinary importance for believers and their communities<sup>2</sup>. Man is a unity of body, soul and spirit. Spirit is a higher part of soul. Believers communicate with God through their spirit<sup>3</sup>. Spiritual problems of believers are not resolved by psychology<sup>4</sup>. Educated physicians should know the elements of psychology of religious persons<sup>5</sup>. This knowledge is particularly important in rehabilitation medicine.

A connection between religion and medicine was established a long time ago. Religious persons take fewer drugs in the hospital environments<sup>6</sup>. Believers are more capable in the activities of daily living as compared with nonreligious and less spiritual persons<sup>7</sup>. They have a strong motive for maintaining oral health<sup>8</sup>. There is a less likelihood of developing chronic pain and weakness in religious persons<sup>9</sup>. Daily spiritual experience and religious activities help believers with rheumatoid arthritis<sup>9</sup>. In patients with multiple sclerosis religion is connected with the problems of their psychological adjustment<sup>10</sup>. Spiritual authorities transform and strengthen psychotherapy of believers<sup>11</sup>. Chaplains beli-

eve that they should be active members of medical staffs<sup>12</sup>. Occupational therapists and the physicians of family medicine look for religious and spiritual education<sup>13, 14</sup>. However, there are many scientific and practical perplexities concerning the connection between medicine and religion.

Pastoral care is a religious support which a religious patient receives from priests, chaplains, imams, rabbis or other religious authorities. Religious support, in terms of clinical medicine, is a spiritual support which religious patients obtain from religious and trained medical workers. Pastoral care and religious support for believers are more an exception than the rule in western medicine, as is the case in Serbian and Russian medicine, as well<sup>1, 15-18</sup>. Some physicians in the United States run away from religious patients and their religious needs. The main reasons are the lack of time and the fear of crossing the professional borders<sup>15</sup>. There is some kind of religious medicine in Russia, so-called "Orthodox medicine"<sup>3</sup>. But Kostina<sup>17</sup>, for example, claims that more physicians in this country are turning into insensitive persons with a low level of empathy. She states that in Moscow, according to one research, only 31% of patients believe physicians. Some western researches think that religious authorities are poorly trained for the work with invalids. They neither have enough experience for that nor enough money for this activity<sup>19</sup>. What about Serbian medicine?

In some Serbian hospitals and rehabilitation institutions there are sacral objects and clergymen. These spiritual per-

sons are mostly priests of the Serbian Orthodox Church. Unfortunately, the pastoral care in terms of active priests' participation in the medical staff does not exist. Military priests, chaplains, imams and rabbis are a part of the Serbian Armed Forces<sup>20</sup>. However, the results of their work are not easily perceived. According to our knowledge, so far, in Serbian medicine, particularly in rehabilitation medicine, there have not been attempts of medico-theological studies. Many questions in this sense are open. For example: can a clergyman be a useful member of a rehabilitation team; can religious medical workers, trained by priests, correctly carry out the religious support; is there a connection between pastoral care and religious support in patients with osteoarthritis? Namely, it is well-known that some kind of education is an obligatory treatment for these patients. Pastoral care and religious support are a kind of education. Education of patients with osteoarthritis could be guided by medical workers and laymen<sup>21, 22</sup>. There is yet one important issue. Could a single-system experimental design ( $n = 1$ ) help us to obtain the answers to some of these questions?

The aim of this report was to present the effects of pastoral care and religious support in a 73-year old patient with a severe form of osteoarthritis.

### Case report

The patient was a 73-year-old woman with severe form of osteoarthritis hospitalized at the Clinic for Physical Medicine and Rehabilitation, Military Medical Academy in Belgrade. Her main complaints were pain, anxiety, depression and heterogeneous problems in the activities of daily living. Osteoarthritic lesions were located on the cervical and lumbar spine, the hips and the knees. According to her medical history she earlier had lumbar disc hernia operation and non-operating treatment of rectal cancer. The patient walked with difficulty and used a stick. We performed multiple treatment with reversal design (withdrawal design)<sup>23-25</sup> in which the basic treatment consisting of a common hospital care, pharmacotherapy and physical therapy (the treatment A) was alternatively changed with the treatment that included combination of the basic treatment and religious support provided by religious psychiatrist and physiotherapist (the treatment B) or combination of the basic treatment and pastoral care provided by military priest (the treatment C). The treatment A was applied three times and lasted two weeks, every time. Treatments B and C were applied once and lasted three weeks, each. The order of the treatments was: A→B→A→C→A. Duration of whole treatment was three months.

Within basic treatment the patient occasionally took meloxicam, ketorolac, paracetamol, metamizol and gabapentin to treat pain. Mianserin was administered to treat depression in a single evening dose of 15 mg as a continuation of the outpatient (prehospital) therapy.

Physical treatment was unified and consisted of low-level laser therapy, transcutaneous electrical nerve stimulation (TENS) and exercise. A dosage and a continuity of the physical therapy were occasionally changed.

The treatment B meant the introduction of religious support as an addition to the basic treatment. Religious sup-

port was carried out 3 times a week. Each session took 45–60 minutes. This kind of treatment continued 3 weeks. Religious support to the patient was provided by the psychiatrist and the physiotherapist who had been prepared spiritual activities by military priest. This preparation meant fasting, confession, and a prayer for the beginning of the good deed. Religious support was based on spiritual talks, reading of religious texts (the Bible in the first place), listening to spiritual music and on personal and mutual prayers.

The treatment C included combination of the basic treatment and pastoral care. Pastoral care was carried out 3 times a week. Each session took 45–60 min. This kind of treatment continued three weeks. The military priest provided pastoral care. This activity was based on religious talks with the patient, on the Communion and on the Holy Sacrament of Eucharist and Confession. Introduction of particular treatment was randomly assigned.

During the treatment periodical assessment and daily assessment of the treatment effects were performed.

Periodical assessment was performed at the start and at the end of the whole treatment. The marks of observation and the measuring scales were: the mental state of the patient – The Mini Mental State of Examination (MMSE)<sup>26</sup>; the activities of daily living – The Western Ontario and McMaster Universities (WOMAC) scale, section C<sup>21</sup>; the level of depression – The Hamilton Rating Scale for Depression,<sup>26</sup> and organizational (ORA) and non-organizational (NORA) religious activity, as well as intrinsic religiosity (IR) – The Duke University Religion Index – DUREL<sup>27</sup>.

Main assessment of the treatment effects was on a daily basis. The marks of observation and the measuring scales were: the level of depression – The Zung Self Rating Depression Scale<sup>26</sup>; the level of anxiety – The Zung Self Rating Anxiety Scale<sup>26</sup>; the functional capability of the patient – The Barthel Index and The Functional Independent Measure (FIM)<sup>26</sup>; the life satisfaction of the patient – The Life Satisfaction Index<sup>26</sup>, and pain during activities and rest – Visual Analogue Pain Rating Scale<sup>26</sup>.

Measuring was performed by the members of the healthcare team who were not engaged in pastoral care and religious support.

Nonparametric statistics were used in the quantitative analysis: the percentage of non-overlapping data (PND), and the percentage of data points exceeding the median (PEM). The PND and PEM values below 0.7 reflect questionable effectiveness of a treatment. The values between 0.7 and 0.9 reflect moderate effects. The values above 0.9 are considered as a highly effective treatment<sup>28-30</sup>.

This treatment protocol was approved by the Ethic Committee of the Military Medical Academy, Belgrade.

### Analysis of the treatment

The patient was cognitively preserved during the whole treatment (MMSE, start = 29; end = 29). She had significant problems in the activities of daily living due to pain and stiffness (WOMAC, start = 48; end = 45). At the start of the treatment some incompatibility regarding the measure of depression was perceived. According to the Hamilton's scale the

patient was moderately depressed (Hamilton, start = 20). According to the Zung's scale she was not depressed (Zung, start = 45,3). At the end of the study the patient was not depressed (the Hamilton scale = 7, the Zung scale = 46.2). The patient was a highly religious person (DUREL, ORA, start = 5, end = 5; DUREL, NORA, start = 6, end = 6; DUREL, IR, start = 13, end = 13).

The score of depression is shown in Figure 1. It was stable during the first two-week period of the basic treatment. During the period of religious support (treatment B) and during the second period of the basic treatment (treatment A) the depression was mild to moderate. When pastoral care was introduced (treatment C), the level of depression was reduced.

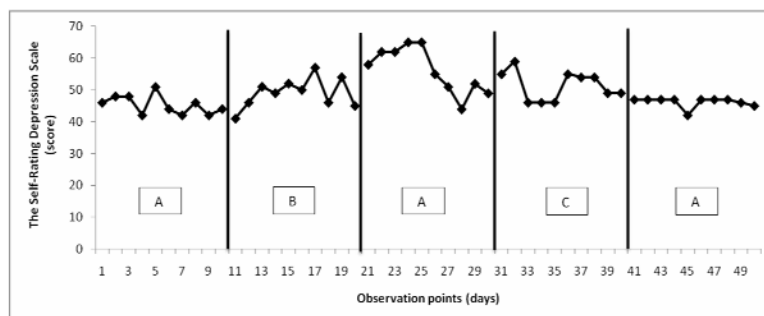
The score of anxiety is shown in Figure 2. It was also stable during the first basic treatment. When the religious

support and pastoral care were introduced (treatments B and C, respectively), the level of anxiety was reduced.

A life satisfaction score (Figure 3) was stable in the periods of the treatment A duration. When the religious support and the pastoral care were introduced, the life satisfaction score was not changed.

A functional capability score (FIM) is shown in Figure 4. It was stable without marked trend during periods with the basic treatment. When the religious support and the pastoral care were introduced, the patient's functional capability was not improved.

A functional capability score expressed as Bartel index (Figure 5) showed a mild instability in the second period of the basic treatment (treatment A). When the pastoral care was introduced, the functional capability was slightly improved.

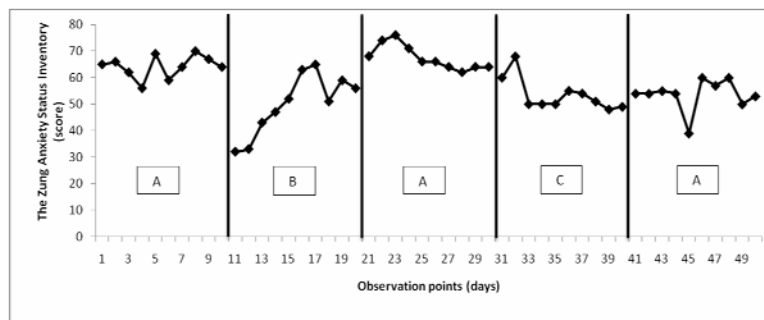


**Fig. 1 – The score of depression during the treatment (The Zung Self Rating Depression Scale <sup>26</sup>)**

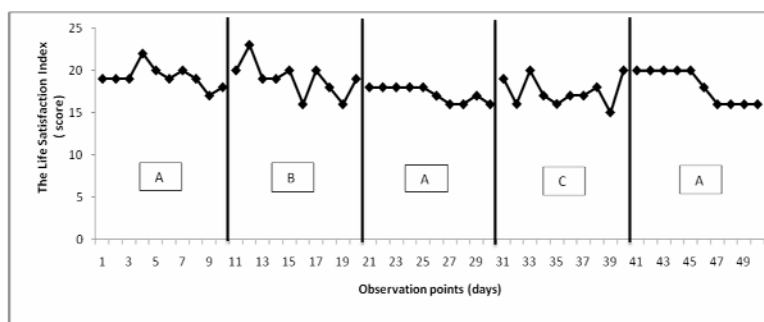
**A – the basic treatment consisting of common hospital care, pharmacotherapy and physical therapy (the treatment lasted 2 weeks each time).**

**B – the treatment A + religious support (3 times a week; such session lasted 45-60 min); the treatment B lasted 3 weeks.**

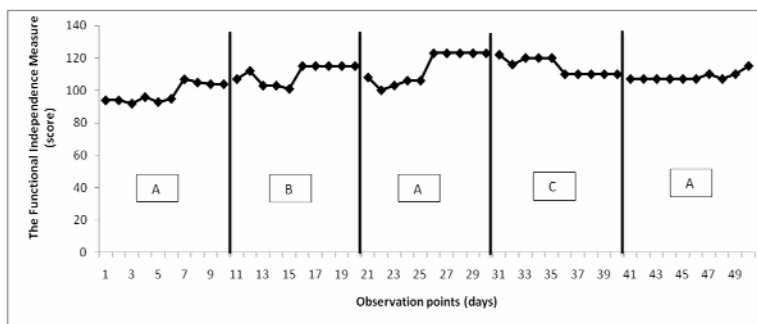
**C – the treatment A + pastoral care (3 times a week; such session lasted 45-60 min); the treatment C lasted 3 weeks.**



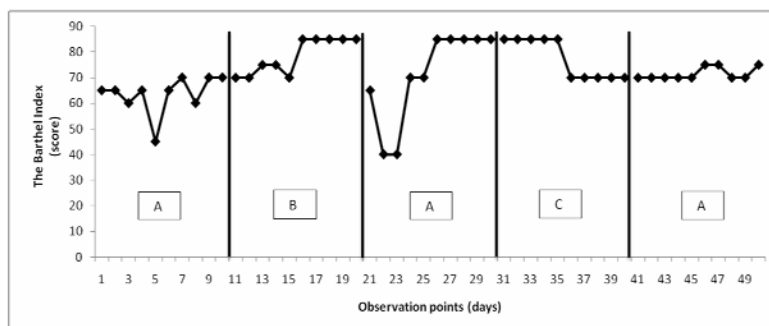
**Fig. 2 – The score of anxiety during the treatment (The Zung Self Rating Anxiety Scale <sup>26</sup>), (for explanation see Figure 1).**



**Fig. 3 – The life satisfaction score during the treatment (The Life Satisfaction Index <sup>26</sup>), (for explanation see Figure 1).**



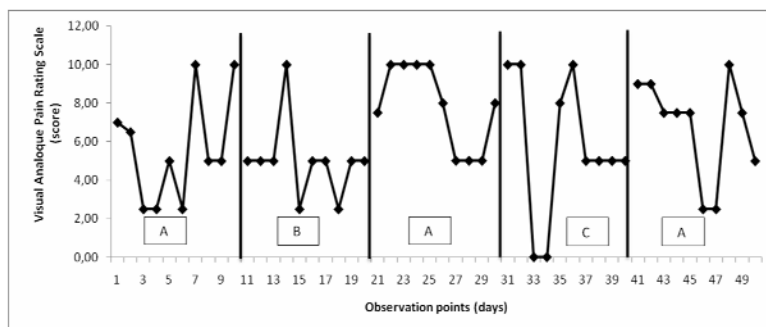
**Fig. 4 – The functional capability score during the treatment (The Functional Independent Measure – FIM<sup>26</sup>).**  
(for explanation see Figure 1).



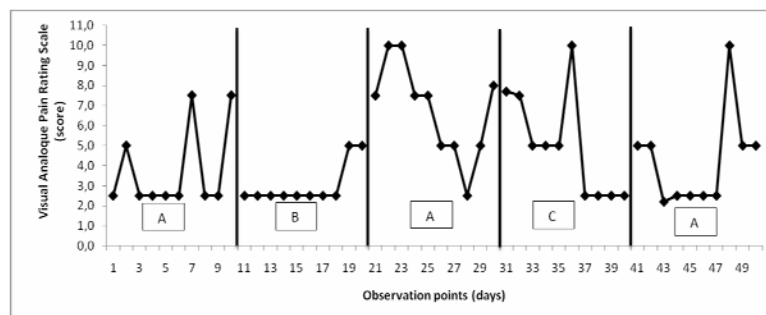
**Fig. 5 – A functional capability score during the treatment (The Barthel Index<sup>26</sup>).**  
(for explanation see Figure 1).

A score of pain in activity and rest (Figures 6 and 7) showed an extreme instability in the first period of the basic treatment. As a result, the estimation of the religious support and the pastoral care effects on the pain phenomenon was not possible.

Quantitative analysis demonstrated that the anxiety of the patient was moderately to significantly reduced by introducing religious support (treatment B: mean and mean deviation =  $50.1 \pm 10.89$ ; variability = 4.598653; mean shift = 0.219626; PND = 0.6; PEM = 0.9) and pastoral care (treat-



**Fig. 6 – The score of pain in activity during the treatment.**  
(for explanation see Figure 1).



**Fig. 7 – The score of pain at rest during the treatment**  
(for explanation see Figure 1).

ment C: mean and mean dev. =  $53.5 \pm 5.90$ ; variability = 9.062591; mean shift = 0.207407; PND = 0.9; PEM = 0.9). The patient's depression was reduced after introducing pastoral care (treatment C: mean and mean deviation =  $51.3 \pm 4.66$ ; variability = 10.99005; mean shift = 0.08881; PND = 0; PEM = 0.9). It is worth noting that this improvement was significant according to only one statistical test (PEM). The patient's functional capability, expressed by the Barthel index, was also improved after the religious support (treatment B: mean and mean deviation =  $78.5 \pm 7.09$ ; variability = 11.07087; mean shift = -0.23622; PND = 0.7; PEM = 0.7). These results are presented in Table 1.

was important but nevertheless an additional clinical treatment. We established some improvement of the patient's functional capability during the treatment with religious support and pastoral care, as well, but these effects can not be explained by pastoral care and religious support because parameters of functional capability during periods of the basic treatment were unstable.

This case report could have both professional and practical importance.

We live in the era of technocratic medicine. It seems that a patient is an instrument today, and not the aim<sup>31</sup>. Jaspers diagnosed a disease of modern man yet one hundred

Table 1

The results of quantitative analysis							
Scales	Design-phases	Mean	Mean dev.	Variability	Mean shift	PND	PEM
Depression Scale (score)	A	45.3	3.056868	14.81909	/		
	B	49.1	4.72464	10.39233	-0.08389	0.1	0.2
	A	56.3	7.242621	7.773429	-0.14664		
	C	51.3	4.667857	10.99005	0.08881	0	<b>0.9</b>
	A	46.2	1.619328	28.53036	0.099415	/	/
Anxiety Scale (score)	A	64.2	4.093898	15.68188	/		
	B	50.1	10.89449	4.598653	<b>0.219626</b>	0.6	<b>0.9</b>
	A	67.5	4.455334	15.15038	<b>-0.34731</b>		
	C	53.5	5.903389	9.062591	<b>0.207407</b>	<b>0.9</b>	<b>0.9</b>
	A	53.6	5.678028	9.439897	<b>-0.00187</b>	/	/
The Life Satisfaction Index (score)	A	19.2	1.316561	14.58345	/		
	B	19	2.054805	9.246621	0.010417	0.1	0.1
	A	17.2	0.918937	18.71729	0.094737		
	C	17.5	1.715938	10.1985	-0.01744	0.3	0.3
	A	18.2	1.988858	9.150981	-0.04	/	/
Independence Measure (score)	A	98.4	5.834762	16.86444	/		
	B	110.1	5.933895	18.55442	-0.1189	0.6	0.6
	A	113.8	9.919677	11.47215	-0.03361		
	C	114.8	5.266245	21.79921	<b>-0.00879</b>	0	0
	A	108.4	2.633122	41.16786	<b>0.055749</b>	/	/
The Barthel Index (score)	A	63.5	7.472171	8.4982	/		
	B	78.5	7.090682	11.07087	<b>-0.23622</b>	<b>0.7</b>	<b>0.7</b>
	A	71	18.07392	3.928312	<b>0.095541</b>		
	C	77.5	7.905694	9.803061	<b>-0.09155</b>	0	0
	A	71.5	2.415229	29.60381	<b>0.077419</b>	/	/

PND – percentage of non-overlapping data; PEM – percentage of data points exceeding the median.

## Discussion

The results of this study emphasize three important facts: active collaboration between priests and medical workers is possible in the clinical setting and gives results; patient's anxiety and depression could be significantly diminished with pastoral care and religious support, and it is possible to train medical workers to provide religious support to religious patients. The patient's psychological status was improved with pastoral care and religious support. The patient was a highly religious person and these results could be expected. In medical sense, this religious-spiritual activity

years ago. This diagnosis has four words: hopelessness, purposelessness, loneliness and alienation<sup>32</sup>. Yet Heidegger claimed that losing of religion is one of the manifestations of the scientific-technical attitude to life<sup>32</sup>. A religious patient does not live without God. Physicians here mainly take care about a patient's body. In our profession today, with a little exception of psychiatric medicine, a patient's soul and spirit are completely in the background. Good medical workers, whether they are religious persons or not, can and should lead a patient's soul into recovery. Of course, they cannot do a priest's job, but priests and medical workers should help each other and should work together in a clinical setting

(Figure 2). This opinion should not be understood as returning to creationism: this is our obligation towards the sick and disabled believers. This is particularly important for older religious patients. It is valuable here to cite Professor Jerotić<sup>33</sup>, who is the main authority in Serbian religious medicine. He said, ten years ago, that it is not possible to establish the state of religiosity of Serbian old people after decades of atheistic, even God-exterminating, propaganda. Professor Jerotić suggested a close cooperation between priests and physicians, especially regarding old religious patients in the hospital environment.

This is certainly important. However, humanism and religion differ regarding their motives<sup>2</sup> and “humanism” is not worth much to a religious person.

Economical factors today are more frequently the main limiting factors in psychotherapy of patients with osteoarthritis. Psychotherapists are the front line in the struggle against anxiety and depression, but their work is too expensive. Our experience shows that religious medical workers, trained by the military priest, could be good educators and spiritual advisers to the religious patient with a severe form of osteoarthritis. The psychological status of our patient was improved, in spite of the fact that pastoral care and religious support did not influence the pain phenomenon and life satisfaction. This is another proof that pain, viewed separately, must not be the main factor of anxiety and depression in patients with osteoarthritis.

In the available literature we found no similar treatment protocol which links religion and medicine using the single-case experimental design. On the other hand, there are many qualitative and quantitative studies on this topic the results of which are very interesting. Religious patients wish a spiritual contact with their physicians and are hoping for a mutual prayer<sup>7</sup>. Faith in secular societies is not completely denied. A study, carried out in Germany, showed that 56% of 576 patients with chronic pain believed in guardian angels<sup>34</sup>. Closs et al.<sup>35</sup> conclude that awareness of a connection between religion and chronic pain could help medical workers to communicate better with religious patients. Reynolds<sup>36</sup> considers that religious communities must change their attitude toward the disabled in terms of including persons with handicap in organized religion life more successfully. Patients should be actively included in the process of clinical deciding<sup>37</sup>. Some physicians in Russia are acquainted with the importance and the range of religious medicine<sup>3, 5, 17, 18</sup>. In any case, the matter in Serbia is different. Serbian society is a secular society where most medical workers are not aware religious patients and their religious needs. Religious medical workers could help religious patients if these patients were included in the process of clinical deciding.

Medicine in the future is the medicine of longevity<sup>38</sup>. This is particularly important for the rehabilitation medicine which is mostly the medicine of old persons and handicapped persons. However, there is no a unified attitude in the world, neither in the professional, nor in the organizational sense, regarding the religious support for religious rehabilitation patients. For example, old handicapped people do not

consider that interdisciplinary home care, which possibly includes the religious support, is a better option than the common home care<sup>39</sup>. On the other hand, occupational therapists, as important members of the rehabilitation team, think that religious-spiritual education is necessary for their professional life and successful practice<sup>13</sup>. There is not a common attitude regarding the role of religious authorities in the rehabilitation team. According to Latella<sup>40</sup>, a chaplain is an obligatory member of the rehabilitation team. On the contrary, Turk et al.<sup>41</sup> have also listed all members of the rehabilitation team, but have not mentioned any religious authority, not even the chaplain. When religious-spiritual support of religious rehabilitation patients is in question, there is no unity in the western rehabilitation world. Love is love if it justifies the sense of love by deeds<sup>42</sup>. There is little love in modern medicine. A religious anamnesis does not exist in the Serbian patient's history. How then we find a way to a religious heart?

Today it is not possible to link religion and medicine in scientific sense without a precise research methodology. A pioneer in the field of medical-theological researches in the western world, Professor Harold G. Koenig, emphasizes the necessity for serious training of researches in this scientific area<sup>1</sup>. Serious studies in this field commonly have large samples of patients and use a complex research methodology. These studies were projected by multidisciplinary teams of researches<sup>43</sup>. Randomised controlled trial is the most powerful methodology for checking the effectiveness of some kind of medical treatment. Nevertheless, some problems related to scientific methodology and the connecting of research results with practical issues in rehabilitation medicine are observed. Old people, especially aged 80 and above, are almost excluded from medical researches<sup>44</sup>. Most medical decisions in daily practice are not established on clear evidence-based medicine<sup>45</sup>. In projecting our treatment protocol a question arose: Which kind of methodology should be used to check the efficiency of the recommended religious and spiritual programs<sup>46</sup>? We opted for the single-system or single-case experimental design because an important element of evidenced-based rehabilitation is the tendency of medical experience originating from individual patients<sup>23</sup>.

There are three main methodological characteristics of the single-system experimental design: studying a single person; repetition of measuring, and sequential application and withdrawal of intervention<sup>23</sup>. This design is only seemingly plain, actually this is a very complex research methodology. It implies a strong precision in research work and caution in statistical analyses and interpretation of results. Multiple treatment-reversal design and alternating treatment design (A-B-A-C-A) were used in different common medical and rehabilitation researches, from issues related to traumatic brain injuries and electroanalgesia to the problems in orthotic rehabilitation<sup>21, 25</sup>. So far, in the Serbian rehabilitation science this design has not been used. Commonly, analysis and interpretation of results of this kind of design imply a visual inspection of figures and entering data into tables according to the phases of experiment<sup>23</sup>. We made a step forward. The

quantitative analysis of our results was performed by the nonparametric statistics. This analysis helped us to better recognize the effects of pastoral care and religious support in the patient with a severe form of osteoarthritis.

Treatment effects presented in this case report have to be confirmed in larger studies. Limitations and shortcomings of our treatment protocol are related to the measuring scales and imperfections of the single-system design itself. Namely, the patient's religion was measured by the DUREL index. This was not the best choice because the DUREL was made for the large epidemiological studies. Besides, ethic dilemmas, problems with internal validity, the low power of generalization and complexity of statistical analyses are well-known defects of the single-system experimental design<sup>25,47</sup>. All these factors limit the worth of this study.

## Conclusion

The effects of pastoral care and religious support in the old highly religious patient with a severe form of osteoarthritis were good. The patient's anxiety was moderately to significantly reduced by pastoral care and religious support. The patient's depression was diminished by pastoral care.

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## REFERENCES

1. *Aten JD, Schenck JE.* Reflections on Religion and Health Research: An Interview with Dr. Harold G. Koenig. *J Relig Health* 2007; 46(2): 183–90.
2. *Susnjic DJ.* Religion. Belgrade: Cigoja Press; 2009. (Serbian)
3. *Nedostup AV.* Basic question of medicine. In: *Srbulj J, Dimitrijević V*, editors. Jesus, the health of my body. Religious charity guardianship of the Archbishopric of Belgrade-Karlovac; 2013. p. 297–319. (Serbian)
4. *Karapandžin SS.* The influence of the religious service on the preparation and guarding of the land Serbian Armed Forces. Belgrade; Armed Forces Action Belgrade; 2015. p. 147–80.
5. *Berestov A.* God's love in the physician. In: *Srbulj J, Dimitrijević V*, editors. Jesus, the health of my body. Religious charity guardianship of the Archbishopric of Belgrade-Karlovac; 2013. p. 319–31.
6. *Koenig HG, George LK, Titus P, Meador KG.* Religion, spirituality and health service use by older hospitalized patients. *J Relig Health* 2003; 42(4): 301–14.
7. *Haley KC, Koenig HG, Bruchett BM.* Relationship between private religious activity and physical functioning in older adults. *J Relig Health* 2001; 40(2): 305–12.
8. *Zibi A, Sebn-Cohen H, Feder-Bubis P.* Religious leaders: opinions and guidance towards oral health maintenance and promoting a qualitative study *J Relig Health* 2015; 54(2): 343–86.
9. *Stewart WC, Adams MP, Stewart JA, Nelson LA.* Review of clinical medicine and religious practice. *J Relig Health* 2013; 52(1): 91–106.
10. *Makros J.* The relationship between religion, spirituality, psychological adjustment and quality of life among people with multiple sclerosis. *J Relig Health* 2003; 42(2): 143–59.
11. *Hani H.* Spiritual energy of Islamic prayers as a catalyst for psychotherapy. *J Relig Health* 2015; 54(2): 387–98.
12. *Carey LB, Cohen J.* Chaplain-physician consultancy: When chaplains and doctors meet in the clinical context. *J Relig Health* 2009; 48(3): 353–67.
13. *Morris D, Streecher J, Briggs-Peppler K, Chittenden C, Rubira J, Wisbner L.* Spirituality in occupational therapy: Do we practice what we teach. *J Relig Health* 2014; 53(1): 27–36.
14. *Saguil A, Fitzpatrick AL, Clark G.* Is evidence able to persuade physicians to discuss spirituality with patients. *J Relig Health* 2011; 50(2): 289–99.
15. *Koenig HG.* Religion, spirituality and medicine: Research findings and implications for clinical practice. *South Med J* 2004; 97(12): 1194–200.
16. *Stern RM, Rasinski KA, Curlan FA.* Jewish physicians' beliefs and practices regarding religion/spirituality in the clinical encounter. *J Relig Health* 2011; 50(4): 806–17.
17. *Kostina LJ.* What would Avicenna say. In: *Srbulj J, Dimitrijević V*, editors. Jesus, the health of my body. Religious charity guardianship of the Archbishopric of Belgrade-Karlovac; 2013. p. 332–8. (Serbian)
18. *Volkov J.* Meditations of orthodox's physician. In: *Srbulj J, Dimitrijević V*, editors. Jesus, the health of my body. Religious charity guardianship of the Archbishopric of Belgrade-Karlovac; 2013. p. 341–42. (Serbian)
19. *Schultz CY.* The church and other body parts: Closing the gap between the church and people with disabilities. *J Relig Disabil Health* 2012; 16(2): 191–205.
20. *Karapandžin SS.* Activity of the religious service in the Serbian Armed Forces. Armed Forces Action Belgrade; 2012. p. 341–61. (Serbian)
21. *Brandt K, Lobmander SL, Doherty M.* Management of osteoarthritis Introduction: The comprehensive approach. In: *Brandt K, Lobmander SL, Doherty M*, editors. Osteoarthritis. Oxford: Oxford University Press; 1998. p. 250–5.
22. *Dexter PA, Hayes JR.* Depression in osteoarthritis. In: *Brandt KD, Doherty M, Lobmander LS*, editors. Osteoarthritis. Oxford: Oxford University Press; 1998. p. 338–49.
23. *Graham JE, Karmarkar AM, Ottenbacher KJ.* Small sample research design for evidence: Based rehabilitation: Issues and methods. *Arch Phys Med Rehabil* 2012; 93(Suppl 2): S111–6.
24. *Dancey CP, Reidy JG, Rowe R.* Statistics for the health sciences. A non-mathematical introduction. London: Sage; 2012.
25. *Domboldt E.* Physical therapy research. Principles and applications. 2<sup>nd</sup> ed. Philadelphia: WB Saunders Company; 2000.
26. *McDowell I.* Measuring health. A guide to rating scales and questionnaires. Oxford: Oxford University Press; 2006.
27. *Koenig HG, Büssing A.* The Duke University Religion Index (DUREL): A Five-Item Measure for Use in Epidemiological Studies. *Religions* 2010; 1(1): 78–85.
28. *Deprospero A, Cohen S.* Inconsistent visual analyses of intrasubject data. *J Appl Behav Anal* 1979; 12(4): 573–9.
29. *Scruggs M, Mastropieri MA, Casto B.* The quantitative synthesis of single-subject research: Methodology and validation. *Remed Spec Educ* 1987; 8(2): 24–33.
30. *Ma HH.* An Alternative Method for Quantitative Synthesis of Single-Subject Researches: Percentage of Data Points Exceeding the Median. *Behav Modif* 2006; 30(5): 598–617.
31. *Methropolitan of Odesa and Ismail Agathangel.* About activity of physicians in the modern epoch. In: *Srbulj J, Dimitrijević V*,



- editors. Jesus, the health of my body. Religious charity guardianship of the Archbishopric of Belgrade-Karlovac. 2013. p. 295–7.
32. *Jaspers K*. Allgemeine Psychopathologie. Bin Leitfaden für Studierende, Ärzte und Psychologen. 1. st ed. Berlin: Springer; 1913.
  33. *Jerotic V*. Christianity and psychological problems of man. Belgrade: Ars Libri; 2004. (Serbian)
  34. *Büssing A, Reiser F, Michalsen A, Zann A, Baumann K*. Do patients with chronic pain diseases believe in guardian angels: Even in secular society. A cross-sectional study among German patients with chronic diseases. *J Relig Health* 2015; 51(1): 76–86.
  35. *Closs SJ, Edwards J, Swift C, Briggs M*. Religious identity and the experience and expression of chronic pain: A review. *J Relig Disabil* 2013; 17(2): 91–124.
  36. *Reynolds TE*. Theology and disability: Changing the conversation. *J Relig Disabil Health* 2012; 16(1): 33–48.
  37. *Verma AA, Razak F, Detsky AS*. Understanding choice. Why physicians should learn prospect theory. *JAMA* 2014; 311(6): 571–2.
  38. *Canton J*. The extreme future. Belgrade: Clio; 2009.
  39. *Metzeltin SF, van Rossum E, deWitte LP, Ambergen AW, Hobma SO, Sijpers W*, et al. Effectiveness of interdisciplinary primary care approach to reduce disability in community dwelling frail older people: Cluster randomised controlled trial. *BMJ* 2013; 347: f5264.
  40. *Latella D*. Teamwork in rehabilitation. In: *Kumar S*, editor. Multidisciplinary approach to rehabilitation. Boston: Butterworth, Heinemann. 2000. p. 27–42.
  41. *Turk MA, Mudrick NR, Albrecht GL*. Rehabilitation interventions. Thousand Oaks: Sage Publications Inc; 2013.
  42. *Solovjov V*. The spiritual basis of life. Sense of love. Belgrade: BRIMO; 2001.
  43. *Koenig HG, Larson DB, Hays JC, McCullough ME, George LK, Branch PS*, et al. Religion and the survival of 1010 hospitalized veterans. *J Relig Health* 1998; 37(1): 15–30.
  44. *McMurdo M*. Clinical research must include more older people. *BMJ* 2013; 346: f3899.
  45. *Champan G, Talbot N, McCartney D, Tippett V, Burch D*. Evidence based medicine - older, but no better educated. *Lancet* 2013; 382(9903): 1484.
  46. *Meyerstein I, Ruskin G*. Spiritual Tools for Enhancing the Pastoral Visit to Hospitalized Patients. *J Relig Health* 2007; 46(1): 109–22.
  47. *Johnston JM, Pennypacker HC*. Strategies and tactics of behavioral research. 3rd ed. New York, NY: Routledge; 2009.

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