

Original article

Association between religious life and health: a brief review of quantitative studies

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Abstract

Since the start of the formation of human society, health work turned to cure and prevention of diseases has been tightly organized as being linked to religious practices. With the advent of modernity and appearance of scientific medicine, it has been sought to guide and explain the process of sickness and cure in a manner not linked to religion. However, from the end of the XX century, the theme of correlation between religious life and spirituality with the population health levels started to deserve a broad interest from researchers from several academic institutions. With the appearance, mainly in the United States, of several quantitative medical studies that have researched the association between religious life and health conditions and recovery from diseases, this theme started to deserve recognition from important academic fields on health sciences. These quantitative studies, performed from epidemiological methods, have been important to legitimate the qualitative studies that have also been expanded. This study seeks to make a review of these studies on the international literature.

Keywords

religion epidemiology; spirituality and health; religious life and health; promotion of health and religion

Since the start of the formation of human society, health work addressed to diseases cure and prevention has been closely organized as linked to religious practices. With the advent of modernity and the emergence of scientific medicine, it has been sought to guide and explain the illness and healing as a process divorced from religion. But current antropological studies have shown that religious view continues to be present in all social strata as an important part of the understanding of the health-disease process (IBÁNEZ *et al.*, 2000). Amongst health service users there is a great recognition of religious experience as important when facing personal and familiar problems that come with serious diseases. Also amongst many health professionals the importance of religious experience in order to structure meaning and significance of their practices is widely recognized, which is fundamental

to elaborate motivation for efforts at work and for ethical guidance of behavior in the daily attendance, as well as for the evaluation of personal deadlocks of the professional practice. Groups dedicated to religious experience and reflection are numerous among health professionals.

The recognition of the roles religious experience plays in health happens, however, mainly outside the areas where medical science speech prevails. It happens mainly in popular environments, in the private lives of health professionals and in some fields of human sciences, being neglected by in medical discussions and professional and research formation centers. Only during the 1990's, the appearance, mainly in the United States, of several medical survey studies investigating the association between religious life and health conditions and recovery from diseases, caused this theme to

start deserving recognition from important academic fields in health sciences. These quantitative studies, performed using epidemiological methods, were important to legitimate the qualitative studies, which have also expanded. This study seeks to make a review of these studies in the international literature.

Religion epidemiology: confirming the association between religious experience and health improvement

In the knowledge-structuring model considered as legitimate on the current medicine the quantitative proof of claims is fundamental. Analytical epidemiology, which studies the association between observable facts and diseases, seeking to understand their causes and determinants by means of statistical techniques, has become, on the XX century, the most important and accepted method to obtain the knowledge considered as valid in medicine.

This way, epidemiological studies organized from the 1980's on, showing the association between the participation in religious activities and the improvement of the patients' situation in various diseases, had a great impact both on the medical field and the public opinion, mainly in the USA, deserving cover topics in magazines such as *Time*, *Reader's Digest* and *MacLeans*. Newspapers such as *The New York Times* and the most important American TV networks dedicated extensive coverage to these findings.

Levin's *et al.* study (1987) study is a pioneering one, by reviewing two hundred previous epidemiological studies on the most varied diseases, which for some reason included a question about the religion affiliation of the people surveyed.

According to the author, in spite of frequently being present in epidemiological studies' surveys, this aspect of religion is usually belittled in the statistical analysis that follows them. Levin redid these epidemiological studies recognizing the value of such variable in its association with the diseases under research and verified that practically all main pathologies that attack humanity had already been object of studies linking them to religious practices. They identified significantly positive religious and spiritual effects over the health and disease rates, independently of age, sex, race, ethnic group, nationality or religious sect of the people studied. From that point on, a great number of epidemiologists started to dedicate themselves to the theme, configuring a knowledge field that started to be called religion epidemiology. The *National Institutes of Health (NIH)*, a USA government organ that support researches in the health field, started to sponsor several researches and organizing expert meetings about this

topic. Several American universities created study centers about religion and health, like the *Center for the Study of Religion/Spirituality and Health* from Duke University.

Levin (2003) resumes the main findings of these studies: (a) people that regularly attend religious services present lower disease and mortality rates than those that do not go regularly to these services nor attend them; (b) people that relate a religious affiliation present lower cardiac diseases, cancer and hypertension rates, which are the three main causes of death in the United States; (c) older people that participate in private, institutionalized religious activities present less symptoms, less disabilities and lower depression, chronic anxiety and dementia rates; (d) the religious practice is the biggest determinant of the psychological welfare of Afro-American people - even more important than health or financial conditions; (e) people who have active religious lives live, in average, more than non-religious people. This is considered even when under control, removing from the statistical analysis the interference over the fact that religious people tend to avoid behaviors such as smoking and drinking, that increase the risks of diseases and death. For this epidemiologist, the evidences of presence of a religious factor over the health are "crushing".

An illustrative example of these studies is the one from Comstock *et al.* (1965), researchers from *Johns Hopkins University*, who, using data coming from an epidemiological census involving over 90 thousand people, found that attending less than once a month to religious services doubled and even triplicate the risk of death due to atherosclerotic cardiac disease, pulmonary emphysema, cirrhosis of the liver, suicide, and cancer of rectum and colon. This research group has found afterwards (COMSTOCK *et al.*, 1977) an effective relationship, dose-response type, between the total deaths and the attendance frequency to religious services. Among people who never went to church, the annual death rate by 100 thousand people was 2591,3. For those who went to church less than twice a year, the rate was 1640,1; for those who went from twice to twelve times per year, it was 1511,7; once per month, 1354,3; and once per week or more, 1308,1. Each attendance level reduced the number of deaths a bit more; the attendance to religious services at least once a week reduced in almost 50 per cent the risk of death on the following year.

Levin (2003) narrates an episode he faced when he tried to publish, in one of the main American epidemiology journals, an article analyzing studies such as these and in which, for the first time, he used the religion epidemiology concept. The article was evaluated by experts and received

positive and negative criticism. But a surprise was the letter that the magazine editor sent attached to his opinion. Normally, letters from scientific magazines' editors refusing the publication of an article consist of a standardized text, with less than two paragraphs, signed, many times, by their secretaries. But this refusal letter had almost two pages, written in single spacing, specifying in laborious details how much the article was unacceptable, and even bewildering. It instigated authors to completely give up the idea and no longer to proceed with such a research line. He was scared by the fact of this editor losing so much time commenting an article he would not even suggest to be reviewed and submitted to a new appreciation, and by doing so in such a hostile manner. In this letter, he wanted to make very clear that not only the article was unacceptable, but also the idea of a religion epidemiology itself was, in his own words, "nefarious". Nefarious is something worth hating. This episode reveals the level of an emotional response of rejection that the seek to near the religion topic causes in many scientific fields, as if it could maculate something sacred in scientific methodology, that is, the radical separation of spirituality elements in the analysis process considered as objective by the Newtonian and Cartesian paradigm of Science. This refused article was, a little time after, published on the British journal *Social Science and Medicine* (LEVIN *et al.*, 1987).

Like every risk or protection factor confirmed by epidemiological studies, the findings of these studies do not mean that all persons involved in religious activities will have better health than those not involved. It only presents that "on average", the religious involvement is associated with lower disease rates and bigger welfare levels. The statistical results obtained by epidemiologists tend to hide the exceptions, such as people whose emotional welfare is harmed by religion.

These studies have not yet shown how and why this benefit happens. They also have not differed the meaning of several religiosity experience configurations (some can be beneficial and others not). In fact, epidemiology is not an appropriate methodology for the comprehension of complex dynamics, once it can only study the statistical correlation of well-delimited and standardized characteristics so they can be evenly considered in studies involving a large number of people. But later studies partially advanced on the identification of some religion elements that influence health.

Dimensions of religious life that can be associated to health conditions

A considerable number of researches show that the participation as a religion member is strongly associated

to a healthy behavior. Almost all religions dictate behaviors related to health, sickness and death. For the people who pursue a religion, many doctrines or faithful teachings offer moral and practical guidance related to promoting, preserving or recovering health or emotional and physical welfare. Although not all people with some religious affiliation follow all guidance related to health proposed by their faith, there is no doubt that it can be expected that, in average, people relating a religious identity have more probability of following the rules of their religions than people who relate having none. Além das regras presentes nos ensinamentos religiosos, a consideração do corpo humano como sagrado, freqüentemente presente nas mesmas, leva o crente a valorizar os cuidados de saúde. Besides the rules present in religious teachings, the consideration of the human body as sacred, frequently present on them as well, leads the devotee to value caring for his health.

Other studies, like the one from Ellison *et al.* (1994), showed that people who regularly attended church had access to broader social support networks, formed by members outside their families; they had more contact with members of their social networks; they received more varied social support, both tangible (financial assistance, transmission of messages, guidance, transportation, help with meals or in case of sickness) and emotional; and had a more favorable idea about the quality of their social relationships. The fact that religious activities gather people with common purposes raises and strengthens social support networks. These networks have been deserving several studies after it was confirmed that individuals with a stronger social support system are more capable of dealing with the most important changes in life, while individuals who have little or none social support are more vulnerable to such changes, particularly the undesirable ones. House *et al.* (1988), in a review study about social support, affirm that individuals that are more isolated or less integrated socially are less healthy, psychologically and physically, and have greater probability of dying early. To them, the risk of death associated with lower social support levels exceed those caused by smoking.

The studies mentioned so far associate health to the participation in institutionalized religious services. When expressed through other than this kind of participation, the meaning of spirituality for the health of people is more difficult to be epidemiologically evaluated, for it is not habitually configured as well defined and clear behaviors to fit in researches' standardized large sample surveys. But some trials have been done, usually seeking to associate the activity of praying with health indicators.

Ellison *et al.* (1989) investigated the effect of religious devotion over health in Afro-Americans, in a representative sample from all USA. Religious affiliation was evaluated by combining data about the frequency of praying in surveyed people's daily lives and their express statement of connection feelings with God. The devotion's intensity has strongly shown to be a determinant of the satisfaction levels regarding one's life, independently of the frequency of attendance to church, religious affiliation, social interaction with other people, health situation or occurrence of traumatic happenings on the previous year. It has been shown, therefore, that the effect of religious devotion for subjective welfare overcomes any benefits that can be attributed to the type of religious affiliation or the frequency of attendance at religious services. Many other studies have also confirmed the association between personal religious practices and what researchers call "subjective health". Subjective health is usually measured with a single question, such as, for example: in general, would you evaluate your health as excellent, good, regular or bad? Subjective health is considered a trustable indicator of a person's general health, as well as one of the best known prognostics of mental health, functional disability level, medical appointment rates, and even longevity. Koenig *et al.* (1988), from a study about non-institutionalized religious activity, performed among 1100 people in Illinois, USA, have found that frequent religious worship was associated with a superior morale disposition and with less agitation, loneliness and dissatisfaction with life. It was also associated with a greater capacity to deal with tension. This was identified in women, youngsters and elders, in both sick and healthy people, independently of religious affiliation.

Bowker (1970), studying the diverse contemporary religions, affirms that all great religious traditions have theories about suffering, creating explaining contexts that provide meanings and strategies in order to deal with desperate situations. The way to define suffering and how it is understood and solved changes from one religion to another. But all of them seek to foster hope in people who adopt their teachings.

Idler (1987), in a study with 2700 adults in Connecticut, found strong evidence of two effects of the personal involvement with religion. First, religious faith seems to reduce the incapacitating effects of chronic diseases. Second, religious involvement reduces the harmful effects of physical disabilities over mental health. For this medical sociologist, faith serves, in part, to soften the harmful effects of stressing situations or that may represent health risk.

Other studies have shown that personal involvement with religious life is also related to improvement of organic conditions. Oxman *et al.* (1995), studying patients who had been through open heart surgery, showed that mortality, in six months, was 11% in patients who considered themselves as "not at all", "a little" or "reasonably" religious. Those who considered themselves as "deeply" religious showed a zero mortality rate. The regular attendance to church also showed to be associated to a significant decrease of mortality, reducing its rate from 12 to 5%, but not in a dramatic manner such as in the case of people who related an important religious involvement.

Several suppositions have been raised to justify the findings that faith and personal religious life benefit health. For some researchers, religious life, when inspiring thoughts of hope and optimism, as well as positive expectations, may function as a placebo. For Taylor (1989), the placebo effect does not happen only by psychological mechanisms, but also because it causes physiological effects on the body. Deep subjective beliefs generate immunological, hormonal and biochemical changes caused by physiological mechanisms that only recently started to be revealed. For this researcher, even optimistic mental attitudes not based on reality (what she has called creative self-mistake or positive illusions) have important protective effects against diseases. Placebos may relieve acute post-surgical pains, induce sleep or place the mind in alert, produce dramatic remissions of both symptoms and physical manifestations of chronic diseases, while starting the rejection of warts and other abnormal growths (WEIL, 1988).

Great theoretical challenges have also been raised from studies about amazing body alterations observed in advanced yoga and meditation practitioners, initially reviewed by Funderburk (1977), revealing how these spiritual practices can reduce blood pressure, radically control heart rate, move viscera and heat or cool body parts. On medical practice, accounts of serious and well documented diseases that disappeared without plausible justification are frequent inside the current scientific knowledge. O'Reagan *et al.* (1993) analyzed 1,385 articles from medical newspapers journals reporting cases on which cancer and many other serious chronic diseases disappeared after a treatment considered inadequate or even without any medical treatment at all.

It is necessary to recognize the initial character of explaining suppositions raised with bigger frequency from articles published in traditional scientific journals. It is natural that new empirical confirmations are sought through biological, psychological and social dynamics already known.

Therefore, quantitative evidence of strong statistical association between religious involvement and improvement in disease situations, complications prevention and welfare have been correlated with reinforcing healthy behaviors, stress relief, inspiring positive emotions, stimulating the endocrinous and immunological systems, incentive to beliefs and personality styles that may be adequate to facing crisis situations and strengthening of mutual support social networks. However, some studies about the effect of distant intercessory prayer on health have assented to the inadequacy of those explanations.

The most famous study of this type was performed by Bird (1988). In a randomized and well-planned double-blind research, 393 adult heart patients hospitalized were divided into groups that received Christian prayers from people outside the hospital while others did not. Patients were chosen to participate in a group or another in a totally randomized manner by which neither themselves nor the hospital staff knew who was in which group. The patients and those praying for them never met each other. The prayers were members of some local church, protestant or roman catholic, with a daily active devotional life, and they received only the patients' first name, diagnostic and general condition. For each patient, three to seven religious people were designated to pray. The evaluated treatment consisted of daily prayers done until the patient was discharged. All data were collected without a group having knowledge of the other. The results were amazing. Patients who received prayers, compared with control groups, presented less cases of congestive heart failure, cardiac arrests, pneumonia, and needed less diuretics, antibiotics and intubation, suggesting that distance praying has a benefic therapeutic effect over heart patients. The study had a great repercussion on the American press.

In a double-blind study, Sicher *et al.* (1988), researchers from the *California Pacific Medical Center*, have also investigated the distant praying effect on the treatment for forty advanced-stage AIDS volunteering patients. The patients were randomly distributed between treatment groups and control groups. The treatment was one hour of prayers per day, six days a week, for ten weeks. All patients received standard medical assistance throughout all the study. The investigators recruited forty distance healing agents including Christians, Jews, Buddhists, North-American Natives, Shaman students, and graduated in training programs of both bioenergetic and meditative healing. The average time of experience of these healing agents was seventeen years. They switched places treating a different patient every week. The concept of distance was radicalized on this experiment: the healing agents were spread all over North America. They only had

the first name and the picture of the respective patients, who they never met. Statistical comparison between the ones who received the distance prayers or not showed a big results difference: they got less new aids-related diseases, had less serious diseases, needed less medical appointments, less hospitalizations, less internment days and presented more intense improvements in their state of mind.

Wirth (1990), in California, conducted a double-blind research controlled by placebo on the effect of therapeutic touch, with no physical contact, in wounds experimentally created on the skin of 44 male university students. The therapeutic touch researched was guided by a recently developed technique, but very similar to the ancient practice of imposition of hands. A physician performed several dermal wounds penetrating all the skin depth, on the deltoid muscles area, using local anesthetics and a skin biopsy instrument. Next, they sat close to a wall that had an opening allowing them to pass their arms up to the next compartment, where a no-contact therapeutic touch practitioner exerted his art over the students' wounds, but not over those belonging to control groups. The experiment lasted sixteen days. Neither the study participants, nor the therapeutic touch practitioners knew the real objective of the research. The physician that caused the wounds and evaluated their evolution believed that it was a study about Kirlian photography. The treated group had a faster wounds healing than the controls. Around the eighth day, the average area of the wound surface among those who received therapeutic touch was 3,90 mm² and 19,34 mm² on controls; on the sixteenth day, those rates were respectively 0,42 and 5,86 mm². Actually, at the time, 13 of 23 students treated were completely healed and none of the controls had his wound already healed.

Many other less known studies about the effect of praying and spiritual intercession obtained similar results, and not only in human beings. Benor (1992) raised 150 experimental studies about *in vivo* and *in vitro* effects of praying and other spiritual intercessions over enzymes, cells, fungi, bacteria, seeds, plants, amoeba and animals. More than half of these researches confirmed a positive association: they increased the healing frequency, promoted cells' health or growth and stopped the occurrence of diseases. McCullough (1995), doing a review of studies on this field, observed that researches about prayers and health are relatively primitive. Investigations carefully controlled with human beings, such as Byrd's and the *California Pacific Medical Center* researches are exceptions. But their results, in spite of not yet providing conclusive proofs, raise huge theoretical challenges that can no longer be placed aside. Since religious life is a reason

for passionate involvements, there has been a less critic publishing of results of many researches, raising less realistic expectancies about how prayers can influence the functioning of living organisms.

All these quantitative studies have largely broadened the legitimacy of the theme of spirituality in health in USA, to the point that one third of its medicine schools already have some type of teaching program (research projects, disciplines, courses, study cycles, optative classes, study groups) about the topic in their curricula (LEVIN, 2001).

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