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Is Alcoholics Anonymous religious, spiritual, neither? Findings from 25 years of mechanisms of behavior change research

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Abstract

Background—Alcoholics Anonymous (AA) is a worldwide recovery mutual-help organization that continues to arouse controversy. In large part, concerns persist because of AA's ostensibly quasi-religious/spiritual orientation and emphasis. In 1990 the United States' Institute of Medicine called for more studies on AA's effectiveness and its mechanisms of behavior change (MOBC) stimulating a flurry of federally funded research. This article reviews the religious/spiritual origins of AA and its program and contrasts its theory with findings from this latest research.

Method—Literature review, summary, and synthesis of studies examining AA's MOBC.

Results—While AA's original main text (Alcoholics Anonymous, 1939; 2001; "the Big Book") purports recovery is achieved through quasi-religious/spiritual means ("spiritual awakening"), findings from studies on MOBC suggest this may be true only for a minority of participants with high addiction severity. AA's beneficial effects seem to be carried predominantly by social, cognitive, and affective mechanisms. These mechanisms are more aligned with the experiences reported by AA's own larger and more diverse membership as detailed in its later social, cognitive, and behaviorally-oriented publications (e.g., Living Sober, 1975) written when AA membership numbered more than a million men and women.

Conclusions—Alcoholics Anonymous appears to be an effective clinical and public health ally that aids addiction recovery through its ability to mobilize therapeutic mechanisms similar to those mobilized in formal treatment, but is able to do this for free over the long-term in the communities in which people live.

Keywords

Alcoholics Anonymous; addiction recovery; mutual help; self help; groups; mechanisms of behavior change; spirituality; religion

Introduction

> "When my head doctor, Silkworth, began to tell me of the idea of helping drunks by spirituality I thought it was crackpot stuff, but I've changed my mind. One day this bunch of ex-drunks of yours is going to fill Madison square Garden." (3)

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Similar to the first impression held by this addiction treatment hospital administrator in the 1930's, clinicians today might be forgiven for initially viewing with skepticism and concern the idea of helping individuals to recover from life-threatening and debilitating alcohol and drug use disorders using an ostensibly spiritual program directed by peers with no professional clinical training. Clinically linking patients to "meetings" of Alcoholics Anonymous (AA) held largely in rented church basements that emphasize work on a set of explicitly religiously-worded "steps" that include turning one's life and will over to God and engaging in prayer and meditation, hardly seems in line with our modern sophisticated scientific era of genome wide association studies (GWAS), once a month injectable anti-relapse medications (e.g., depot naltrexone), and color coded scans that show changes in the addicted and recovering brain. Perhaps the only "steps" these addicted individuals should be taking are the ones that lead them up and out of the church basement and into the sunlight of real clinical science?

The administrator quoted above, however, witnessed something that changed his mind. From initially viewing this fledgling precursor, to what was eventually to become AA, as, "crackpot stuff", he began to witness real results. Consequently, he predicted prodigious growth - enough to fill a large New York city arena. He seems to have had the right foresight, but underestimated its growth; AA grew from two members to more than two million worldwide and provided the basis for numerous similar large international recovery organizations (e.g., Narcotics Anonymous). It also has been held in high regard. In 1951, AA won the Lasker Award from the American Public Health Association (considered to be America's equivalent to the Nobel prize); US former Secretary of State, Henry Kissinger, described it as, "America's gift to the world"; and AA's original text, *Alcoholics Anonymous* (1) has a place among only 88 listed books that "have shaped America" in the US Library of Congress. Popularity is not commensurate with efficacy, but if the reach of AA throughout communities and nations is a measure of success, AA appears to have done something right. But what about real scientifically validated clinical and public health impact? And, could it really be true that "spirituality" is where it's at when it comes to recovery from a genetically influenced, disease of the brain, such as addiction (4–5)?

AA itself believes it is indeed spirituality that is the answer, explicitly stating that recovery is achieved through a "spiritual awakening" from working through its 12-step program ("The great fact is just this and nothing less: That we have had deep and effective spiritual experiences which have revolutionized our whole attitude toward life…"; "Having had a spiritual awakening as a result of these steps…"(6)). At least this was the belief when AA published its original text (the "Big Book", *Alcoholics Anonymous*) in 1939, and despite the publication of this book in three further editions since then, this original text has remained unchanged (except for the personal stories at the back of the book). As described further below, meta-analyses, systematic reviews and other studies have been published examining the efficacy, effectiveness, and cost-effectiveness on AA, showing meaningful benefits, but until relatively recently this research has been plagued by self-selection and other biases (7). Moreover, controversy has surrounded AA, in part, due to its quasi-religious/spiritual language and orientation, including legal rulings by the United States Supreme Court that it is a religion and therefore individuals under the US constitution (separation of church and state) cannot be mandated to attend (8)). So, does AA really produce clinically meaningful

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benefits when scrutinized under the highest scientific standards? And, if so, does it really work by increasing spirituality, or through other, more terrestrial, means?

To try to answer these questions, this article concisely summarizes the latest scientific research conducted on AA and its mechanisms of behavior change. To establish whether there is in fact a real beneficial effect of AA participation to explain through mechanisms research, this article begins by briefly summarizing the research examining whether AA participation itself is causally related to better outcomes. This is followed by a review and commentary on the mechanisms of behavior change research conducted on AA during the past 25 years. It is concluded that while ostensibly religious/spiritual in theory, AA's effects appear to be transmitted through its ability to provide access to, and actively mobilize, several helpful therapeutic factors simultaneously, which for some, may include increases in "spirituality". Furthermore, it is argued that the way that AA has been shown to work empirically is more aligned with the experiences reported by its own larger and more diverse membership as detailed in its later social, cognitive, and behaviorally-oriented publications (e.g., Living Sober, 1975)(2) written when AA membership numbered more than a million men and women (about half of whom had 5 or more years of continuous sobriety), than with its quasi-religious/spiritually oriented original text (1) based on the experience of less than a hundred, very severe, nearly all male individuals, most with very short-term sobriety.

Results

In order to establish the therapeutic mechanisms of a particular intervention, it is first important to establish that the intervention does actually confer benefit (9). Consequently, below a brief summary is provided on what is currently known regarding whether AA participation actually aids recovery.

Does AA really confer causal benefits?

Prior to 1990 the evidence base on the effectiveness of AA as an intervention and recovery support service for alcohol use disorders (AUD) was viewed as methodologically poor consisting of mostly short-term correlational studies with narrow and largely unvalidated measurement and low follow-up rates (10, 11). This lack of quality research caught the attention of the Institute of Medicine (IOM) of the National Academy of Sciences. The IOM (12) recognizing AA's widespread influence, called for more rigorous research on its effectiveness and its specific mechanisms of behavior change. For the first time, this legitimized serious scientific investigation into AA and how it works and was facilitated by research funding from the United States National Institutes of Health (NIH). Over the next 25 years, sophisticated research has shown that AA, and professionally-directed treatments designed to specifically stimulate participation in AA (i.e., "Twelve Step Facilitation" [TSF]), to be effective and cost-effective interventions (7, 13). The results from this body of work have surprised many. Even when compared to the theoretically driven state of the art interventions, TSF tends to produce as good, or better, alcohol use outcomes (14, 15), particularly if one looks at sustained abstinence and remission (15–18). In the large multisite Project MATCH clinical trial, for example (19), all three of the treatments studied tried to get patients to remain sober, yet relative to CBT and MET, TSF had 60% and 71% more

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cases, respectively, in full sustained remission during the first year following treatment; at a 3 year follow-up the proportion completely abstinent in the past 90 days was 50% higher in TSF relative to CBT (20). These TSF clinical interventions are not "AA", per se, but their sole aim is to stimulate AA participation, and when mediational tests have been conducted to determine why it is that TSF produces these better outcomes (e.g., compared to CBT), in keeping with TSF theory, it is found that it is because of the greater AA meeting attendance and active AA involvement among patients in the TSF conditions (14–15,20–21). Drilling down even further into the causal effects directly related to AA participation, state of the art analyses have shown that AA confers a causal impact on improving outcomes (22–24). Studies have found also that TSF treatments that engage patients with AA not only produce significantly higher rates of abstinence post-treatment compared to comparison treatments, but result in lower health care costs (17–18,25).

Results from RCTs, quasi-experiments, instrumental variables and propensity score matching studies, as well as numerous statistically controlled naturalistic longitudinal studies (10–11, 26–30), provide consistent results pointing toward clinically meaningful benefit and cost-effectiveness resulting from AA participation. Given the prodigious burden of disease, disability, and premature mortality attributable to alcohol use disorder and related problems (31–32), and the fact that AA is ubiquitous, effective, and free of charge, AA might be the closest thing we have to a free lunch in public health. So, how does it do this?

Mechanisms Research on AA

In a prior systematic review of the mechanisms of behavior change through which AA confers benefits, we found that the majority of the evidence supported AA's capacity to a) help change people's social networks in support of abstinence and recovery (e.g., increasing recovery-supportive social ties); b) boost abstinence self-efficacy and recovery coping skills; and c) help individuals to maintain recovery motivation over time (33). At the time, support for AA specific behaviors and beliefs as mediators, such as spirituality, was limited, but research on the topic was generally sparse. Since that review, however, a number of additional methodologically rigorous studies have supported AA working through its own purportedly central mechanism - increasing spirituality (34–36). Also, AA participation and, specifically, increased spirituality have been shown to explain lower depression among individuals with AUD (37). Conversely, methodologically rigorous studies since the initial review testing AA's other major purported AA mechanisms such as reduced selfishness/self-centeredness (38) and reduced anger/resentment (39) have not been supported. While studies also have shown the benefit conferred by AA may be partially explained by reducing depressive symptoms (37,40), craving (41), and impulsivity (42), with a few exceptions, (43–45), these studies of AAs mechanisms typically only tested models using a single mediator (e.g., abstinence self-efficacy; spirituality). If several single mediators are tested separately and shown to partially explain AAs effects, one is left wondering which of these variables carry the most weight, since we know that interventions like AA work through multiple mechanisms simultaneously. Consequently, this has led to attempts to enhance the specification of tested mediation models of AA using multiple mediator analyses as well as "moderated multiple-mediation" analyses, in order to help clarify both the *relative importance* of these many different potential mediators and also to elucidate whether

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different people (e.g., more or less severely addicted; men and women; young and old) benefit from AA in different ways.

Three such analyses (46–48) tested six different mediators simultaneously. These six previously validated mechanisms consisted of: spirituality; social abstinence self-efficacy (i.e., confidence in one's ability to remain abstinent when confronted with high risk social drinking situations); negative affect abstinence self-efficacy (i.e., confidence in one's ability to remain abstinent when experiencing depression/anxiety), depression symptoms; negative social networks (i.e., dropping heavy drinkers from the social network); and positive social networks (i.e., gaining abstainers/recovering individuals into the social network). These analyses were conducted using the large clinical data set from the multisite Project MATCH study (19)) chosen because of its unusually large clinical sample, very high study retention rate, and use of psychometrically validated measures. The central research question asked in this regard was to what degree AA enhances recovery by boosting spirituality; by boosting individuals' confidence in staying sober when exposed to high risk drinking situations or when experiencing depression/anxiety/anger; by reducing depression symptoms; and by helping people drop heavy drinkers from their social networks and adopt abstainers/low risk drinkers? Furthermore, does the extent to which these different mediator variables explain AAs effect depend on whether you have more or less addiction severity, are a man or a woman, or are young or old?

These complex analyses found that, overall, AA confers benefit through multiple mechanisms simultaneously, but in particular, through facilitating adaptive social network changes and by boosting social and negative affect abstinence self-efficacy (40)). The relative importance of these mechanisms also was found to differ depending on whether one had higher or lower addiction severity (40), was a man or a woman (47), and young or old (48). Specifically, those with lower addiction severity, on average, tended to benefit from AA almost entirely through social mechanisms. This was also true to a large extent for the more severe patients, but these patients also benefitted by AAs ability to mobilize changes in spirituality/religiosity and by helping participants cope with negative affect without drinking (40). For men and women there were starker differences. Men tended to benefit much more from AA through its ability to help them cope with high risk social drinking situations; this was true for women also, but to a much lesser degree; for women, AA lowered their risk of relapse to drinking by boosting their ability to cope with negative affect (47). Young adults (18–29yrs) compared to older adults (30+ yrs) were also found to benefit in different ways. Specifically, young adults benefitted more by AA helping them drop heavy drinkers from their social networks, but, compared to older adults, they were less likely to benefit from AA's ability to help them adopt abstainers/low risk drinkers (48).

This set of results suggested that AA helps different people in different ways. Or, another way of saying this, is that people may use AA differently to help them cope with the different challenges that are particularly salient to them in their lives at that time in their recovery. Noteworthy from these moderated multiple-mediational analyses was the relatively small or non-significant mediational effects carried by spirituality. Given that spirituality is AA's chief purported mechanism of behavior change, at first glance, these findings would appear to be at odds with AA's own theory of change as explicated in its 12-step program

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and original text (1,6). One limitation perhaps was the measure of spirituality used in Project MATCH, which included several items pertaining to formal religiosity (i.e., "reading holy scriptures" "attending religious services); yet, it did include prayer and meditation, which are explicitly prescribed in AA (e.g., in AA's 11th step). Moreover, in a single mediator analysis using this same measure of spirituality in the same sample, as well as other samples, spirituality was indeed a significant mediator of AA's beneficial effects. It is when spirituality is competing for explanatory variance amidst all the other multifarious mediators, however, that it does not shine through; the only exception being among those AA participants with more severe addiction problems.

Discussion

Implications of the research findings on AAs Mechanisms

AA draws on multiple ideas, including medical (i.e., the need to abstain completely in order to avoid triggering and kindling craving and compulsive use (6)), behavioral psychology and group dynamics (i.e., through group meetings/helping others (39, 49) Yalom and Sczeny, 2005; Buckingham social identity paper), and religious/spiritual concepts. In keeping with this range of potential therapeutics, the research findings indicate that AA provides a variety of pathways to recovery, including for some, through boosting spirituality. Results suggest, however, that AA's salutary effects are more consistent with what call Carl Jung termed, "the protective wall of human community (50)", since it appears to help individuals attain and maintain recovery through its ability principally to mobilize recovery-supportive social, but also, cognitive and affective, changes. As such, the research findings appear to be more in keeping with the types of recovery experiences of AA's much larger, more diverse, and recovery-experienced, membership, that are documented in AA's later texts (2) than those more explicitly quasi-religious/spiritual in nature documented in its original text, *Alcoholics Anonymous* (1,6), written when membership was less than one hundred, and consisted almost exclusively of severely addicted White males with very limited sober experience.

One reason for this may be because of the nature of the early case examples on which the Big Book and 12-step AA program is based (1,6). Specifically, we have found that spirituality is a mechanism but only among those with more severe addiction histories (40). AA at its start was comprised almost entirely of very severely addicted cases (1). Consequently, the "vital spiritual experience" deemed crucial for recovery may have been a good fit with the actual experiences of these very impaired early members. With AA's rapid expansion and inclusion of a broader range of addiction-related pathology into the organization, a more diverse set of recovery pathways – highlighting social and cognitive-affective change – appear to have become manifest through the organization's growth.

Consistent with this idea, AA's own original emphasis on needing to have a sudden/quantum "conversion experience/spiritual awakening" in order to maintain sobriety (1) was revised based on the recovery experiences of many more additional members. In the second edition of the Big Book (51), for example, an important statement was added as Appendix II. In it AA acknowledged that this quantum spiritual conversion was not necessarily the way people always got well; rather, people often got well through what it called a spiritual experience of the "educational variety" – a more gradual shift, albeit still "spiritual". But, even this

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mainstream spiritual emphasis was changing shape; the definition broadened greatly in another publication, *Twelve Steps and Twelve Traditions* (1952) even going so far as to not include anything ostensibly "spiritual" at all: "…the most important meaning of it [spiritual awakening] is that people have come to be able to think, feel, and do that which they could not do on their own will power alone." (3). Thus, after just over 20 years of growth, AA moved away from the necessity of a sudden spiritual "conversion experience" and formal belief in God (1), to recognizing recovery can happen without it.

It is interesting to observe that despite an ostensibly quasi-religious tenet to AA, its relationship with religious ideas does not comport very well with the unquestioning deep religious conviction at the heart of most organized religions. In the Big Book, AA's co-founder, Bill Wilson, talks of God but not always reverently; sometimes merely as a pragmatic recovery tool: "Our ideas did not work. But the God idea did"(6). This statement views "God" almost merely as a useful commodity - a "good idea"; something that might be deployed to beneficial effect. It is an observable fact that some people recover from serious illnesses including addiction through finding new faith in religion. For some there appears to be transformative power in adhering to specific faiths and religious ideas and practices and these may provide new meaning and purpose in life (Leamy et al, 2011). Bill Wilson appears to have been willing to try anything and everything to aid recovery. With a pragmatism perhaps borne of desperation teetering on the precipices of permanent mental disability (e.g., through Wernicke-Korsakov syndrome) and death, AA appears to have latched onto the utility of this "God idea", and opened the door to anyone who wanted to make use of it. Given the enduring challenges related to defining what "spirituality" actually is, one of AA's key strengths aiding its growth and survival for the past 80 years may be this pragmatic willingness to use the "God idea" but accept that each member self-defines what "God" and spirituality means to them, including not to self-define as spiritual at all (52).

Just because most of the empirically supported mechanisms of AA are found to be more social, cognitive, and affective, it does not mean necessarily that they are not mobilized or catalyzed by a useful spiritual scaffold (53). In the same way that classical and operant conditioning principles provide a conceptual framework for cognitive-behavioral interventions, the quasi-religious/spiritual storyline in AA may help provide an important coherent "binding" securing the many pages that make up its multifaceted therapeutic milieu. Some members, however, may merely put up with or otherwise ignore the explicitly spiritual aspects while taking advantage of the other elements. Furthermore, the spiritual/quasi-religious language and concepts used in AA might put off some atheists/agnostics from even trying AA, undermine its scientific credibility as an intervention, and prevent clinicians from prescribing it (54–55).

An enduring challenge for sure in spirituality research has been adequately defining and measuring what "spirituality" actually is, despite the growth of those professing to be "spiritual but not religious" (52,56). Definitions, however, of what this actually means will vary greatly. Psychiatrist, George Vaillant, has described spirituality as being biologically based, while religion as being entirely culturally based (57). According to this view, similar to shining white light through a prism in order to discover that it is comprised of a spectrum of seven colors (the colors of the rainbow), shining spirituality through a prism uncovers its

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own multiple constituent parts - the positive emotions, such as gratitude, hope, forgiveness, ecstasy, bliss, compassion, awe, and empathy. These positive emotions lie within the biology of the human brain's limbic system. These "spiritual emotions" are thus a universal reality of humankind. Vaillant also compares spirituality and religion to music and lyrics; spirituality being like the music and religion being like the lyrics. Extending this idea, perhaps what mankind through the millennia has sought to achieve through religion, is a way to access "the music" of these positive emotions by writing different "lyrics". These many different sets of lyrics developed over the centuries, manifesting as different religions, have had the same types of goals: to allay anxious curiosity by explaining where we all come from (e.g., story Adam and Eve), what happens when we die, and to prescribe beliefs and practices that can elicit the human experience of these positive emotions of awe, hope, wonder, bliss, ecstasy, forgiveness, compassion, and gratitude.

Like the more concentrated and potent version of alcohol itself, AA spirituality might be considered unadorned distilled religion without the fancy bottle or label; a recognition that the "God idea" can work for anyone even if they make up their own notion of it and even if some of the essential mechanisms of formal religions such as hope and faith, come from belief in a different type of "G.O.D." – ("Group Of Drunks"). It is a self-constructed self-defined spirituality that is all inclusive. AA tapped into, translated, and redirected this evident transforming power by creating a space and scaffold for the development of these elements, but chose not to take any limiting, dogmatic or prescriptive, denominational approach. It was perhaps implicit recognition of a universal truth that humankind needs to find a way to access these positive emotions, taking the "God idea", and opening the door to anyone who wanted to make use of it.

To extend the "words and music" metaphor, unlike formal religions which might say, "You have the music within you and here are the lyrics that you must sing to access it", through allowing AA members to choose or construct any form of belief that makes sense to them, even merely having a faith in the AA group, it appears to have said implicitly, "You have the music within you" but instead of saying, "Here are the lyrics that you must sing" AA says, "You get to write your own lyrics". In tapping into the "God idea" and borrowing some religious concepts, language, and practices (e.g., faith, prayer, meditation, confession), arguably AA might be considered "relig-ious", but not a relig-ion. Without any formally agreed upon definition of what "spirituality" actually is, AA's focus on gratitude, hope, forgiveness, and compassion, might be considered spiritual in essence. It has facilitated a self-defined notion of spirituality, including even a non-spiritual, secular spirituality (52) if one chooses, to ensure everyone has a chance at making use of its "protective wall of human community" and all that it has to offer. So, circling back to the original question posed at the outset, is AA religious, spiritual, neither? The answer, would appear to be, yes.

Limitations

While many scientifically rigorous studies now exist helping to clarify the MOBC through which AA confers recovery benefits there is still much to learn about these mechanisms. Even the complex multiple mediation studies presented here explained only about 50% of the direct effects of AA on alcohol outcomes leaving the other half unexplained; even less is

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explained in young adult samples. Further research is needed to understand other mechanisms and pathways and how these may differ across different individuals. There are few data too on the dynamic nature of the MOBCs in AA; the ways in which individuals benefit from participation over time are likely to shift in nature and magnitude as individuals progress in recovery and grow older. This needs further study.

Conclusion

The religious overtones of AA continue to raise skepticism and concern in the popular media and scientific arena. Evidence now exists, however, demonstrating AA is an effective clinical and public health ally that aids addiction recovery through its ability to mobilize therapeutic mechanisms similar to those mobilized in formal treatment, but is able to do this for free over the long-term in the communities in which people live. To superficially dismiss AA as a potentially effective addiction recovery support option on the grounds that it is “religious” and therefore unscientific, is inconsistent with the body of rigorous research accumulated during the past 25 years.

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