

Indirect Effects of Prayer on Stress and Life Satisfaction of Alcoholics Anonymous in Poland: An Exploratory Study

Marcin Wnuk

Adam Mickiewicz University in Poznań, Poland¹

Abstract: Prayer is an effective way of coping, leading to beneficial outcomes. Alcohol-dependent participants of Alcoholics Anonymous (AA) use prayer to build a bond with God, which is an important factor in well-being and sobriety maintenance. This study aimed to verify the underlying mechanism of the relationship between prayer as an antecedent of God's support and life satisfaction and the role of hope and stress. In this cross-sectional study, 115 individuals from Poland attending AA meetings participated. The mechanisms underlying the link between prayer and life satisfaction were confirmed. The beneficial role of hope in the life satisfaction of AA participants from Poland was proven. Prayer was both directly and indirectly associated with life satisfaction. Prayer, as a positive antecedent of God's support, was indirectly related to hope, which in turn correlated directly positively with both life satisfaction and satisfaction with different domains of life and indirectly through stress. Prayer, as a spiritual practice and a significant way to bond with God, should be used as an essential factor for both religiously committed and religiously skeptical individuals addicted to alcohol to improve their life satisfaction by shaping hope and effectively managing stress.

Keywords: alcohol dependence, Alcoholics Anonymous, God's support, hope, life satisfaction, prayer, stress

Introduction

Prayer is a common spiritual practice (Yamada et al., 2020) used as a way of coping with different circumstances (Curlee & Ahrens, 2025; Knabb & Vazquez, 2018; LaBarbera & Hetzel, 2016; McKinley, 2024; Suryanto et al., 2024; Wnuk, 2024), especially in difficult and overwhelming situations, such

1. Dr. Marcin Wnuk is a Lecturer in the Faculty of Psychology and Cognitive Sciences, Adam Mickiewicz University in Poznań, Wieniawskiego, Poznań, Poland. ORCID: <https://orcid.org/0000-0002-3784-5870>; Email: marwnu@amu.edu.pl

as epidemics (Curlee & Ahrens, 2025), chronic and life-threatening illnesses (Hamilton et al., 2020) as experienced by individuals with cancer (Brown & Jong, 2020; Folkman, 2010; Miranda et al., 2020; Roh et al., 2018), individuals suffering from multiple sclerosis (Madan & Pakenham, 2014), substance-dependence (Champagne-Langabeer et al., 2025; Foulis et al., 2023), or alcohol-dependent members of mutual-aid groups (Day et al., 2003; Galanter et al., 2017).

Among alcohol-dependent individuals, prayer takes on a unique meaning as a typical religious practice (Wnuk, 2021a) used among believers. Prayer is also a spiritual and essential element for participants who are non-believers, religious skeptics, agnostics, and atheists involved in the twelve-step program Alcoholics Anonymous (AA) (Alcoholics Anonymous World Services, 1981). It means that prayer can be used for alcohol-dependent individuals participating in AA who declare themselves as only spiritual, only religious, or both spiritual and religious. On the one hand, spirituality is overlapping and similar to religiosity (Wnuk, 2023a), but on the other hand, it is a distinct and wider construct than religiosity. Prayer can be a form of both religious and spiritual expression, especially among alcohol-dependent religious believers who are involved in self-help groups.

In Poland, the beneficial role of religiosity and involvement in mutual-aid groups has been confirmed among participants of AA (Wnuk, 2022a), Sexaholics Anonymous (SA) (Wnuk & Charzyńska, 2022), and Al-Anon (Wnuk, 2022b). This indicates that parallel religious and secular treatment processes can coexist among religiously affiliated participants of mutual-aid groups, and their core and common element is prayer, which is employed as a tool for spiritual growth and recovery based on the perception responsiveness of God.

Prayer assumes communication and relation to the sacred (Baesler et al., 2003; James, 1904; Shults & Sandage, 2006; Spilka & Ladd, 2013), which provides beneficial effects but only under the conditions of positive perception and reference to God and the sacred (Wnuk, 2023a), strong faith (Wnuk, 2021b), benevolent image of God (Krause et al., 2015), disclosure to God (Winkeljohn Black et al., 2017; Zarzycka & Krok, 2021), closeness to God (Jeppsen et al., 2015), trust-based prayer beliefs (Krause & Hayward, 2013), certainty of God belief (Levin, 2014), or feeling forgiven by God (Lawler-Row, 2010; Wnuk & Charzyńska, 2024).

Many theoretical models of prayer and health connections have been considered (Breslin & Lewis, 2008). There is a lack of research (Breslin & Lewis, 2008; Masters & Spielmanns, 2007) that explores these potential mechanisms, especially in alcohol-dependent individuals. This study aims to fill this gap and by following the suggestions of McCullough (1995) and other authors

(Levin, 1996; Watts, 2001). I proposed and verified the psycho-spiritual mechanisms underlying the relationship between prayer and life satisfaction as a cognitive aspect of subjective well-being (Diener, 1984). Previous studies have shed additional insights on this topic, indicating hope (Wnuk, 2021c) and stress reduction (Achour et al., 2019; Wnuk, 2023b) as two factors linking prayer with well-being. This study aims to verify the role of prayer as a tool to receive God's support, in which hope and effective stress coping are considered life satisfaction predictors.

Review of Literature

Prayer in Relation to Hope and Stress – Indirect Links Through God's Intervention

Among many conceptual models regarding prayer, the well-being relationship explains the beneficial influence of prayer, focusing on the physiological, spiritual, social support, and placebo effects (Breslin & Lewis, 2008). It also considers psychological effects, which emphasize the role of hope (Levin, 1996; McCullough, 1995; Watts, 2001). For example, in Wnuk's (2023a) research among Chilean students, prayer and mass attendance indirectly positively affected spiritual experiences related to hope, which in turn predicted all subjective well-being indicators. Furthermore, among individuals with obsessive-compulsive sexual disorders in Poland involved in Sex and Love Addicts Anonymous (SLAA), prayer was only indirectly linked with hope via spiritual experiences (Wnuk, 2017). In another study conducted on Polish students, prayer was positively linked with hope and meaning in life only among students with more than average strength of faith. In contrast, those relationships were irrelevant in groups of students with average and less-than-average levels of faith (Wnuk, 2021b). Moreover, the studies of Krause et al. (2015) and Krause and Ironson (2019) showed that a benevolent image of God is a necessary factor for hope as a predictor of life satisfaction and physical health when church attendance is considered.

The presented results imply that to attain the positive outcomes of spiritual practices, a positive connection to God and divinity is necessary. If these conditions are not fulfilled, prayer will not evoke any desirable effects and will not be connected to God's responsiveness due to his convincement regarding disengagement. Exline et al. (2021) showed that divine engagement predicted a positive perception of God, which is manifested in secure attachment, collaborative religious coping, and gratitude to God. At the same time, divine disengagement was correlated with negative valence and a distance-related

image of God, such as anxious and distant attachment and self-directing religious coping.

Prayer is one of the methods used by alcohol-dependent individuals to stay sober (Petrova et al., 2015), but research regarding the effectiveness of this spiritual practice is lacking. The study of Koski-Jännes and Turner (1999) has shown some suggestions where prayer is recognized as one of the most effective methods of maintenance and provides changes among alcohol-dependent. Prayer is an immanent element of a twelve-step spiritual program (Alcoholics Anonymous, 2001) and a useful and effective method of building a relationship with God. For example, this suggestion finds reflections in the content of the eleventh step: "Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out" (Alcoholics Anonymous World Services, 1981). According to Carroll's research (1993), the implementation of this step was positively correlated with finding meaning in life. Building a relationship with God through prayer is possible due to the third step, realization, which is connected with changing the image of God from punishing and abandoning to merciful, loving, trustful, caring, and present (Alcoholics Anonymous World Services, 1981).

One of the functions of prayer is finding hope, but this process can only be effective in the case of a positive God image and conviction about his intervention (engagement) (Exline et al., 2021). Furthermore, previous studies have also assumed a similar concept (Wnuk, 2017). Among Polish participants of Sex and Love Addicts Anonymous, faith and prayer were indirectly connected to hope through spiritual experiences (Wnuk, 2017). Also, in Chilean students, positive references to God and involvement in the spiritual sphere of life were necessary to predict hope by prayer. Turning out to a loving and merciful God during the prayer and believing in receiving the appropriate support increase the chance of positive results, giving the motivation to action directed to achieve expected goals. Exactly in this process, hope is rooted as "a multi-dimensional dynamic life force characterized by a confident yet uncertain expectation of achieving good, which to the hoping person, is realistically possible and personally significant" (Herth, 1992, p. 1253).

Taking into account the above, I expected that in AA participants from Poland, prayer is positively and indirectly related to hope through God's support (Hypothesis 1), meaning that a beneficial perception of God's actions is needed to instill hope through prayer. In other words, I assume that prayer is necessary, but without God's support, it is insufficient to build hope.

The second function of prayer is coping with stress (Curlee & Ahrens, 2025; Knabb & Vazquez, 2018; LaBarbera & Hetzel, 2016). Many studies have confirmed that prayer can reduce stress (Ai et al., 1998, 2009, 2010; Cooper et al., 2014; Ferguson et al., 2010). However, the mechanism of this influence has not been fully explained. On the one hand, on the physical level, stress may be reduced by decreasing cardiovascular reactivity (Masters et al., 2022). On the other hand, on the psychological level, depressive symptoms (Ai et al., 2010) can be lessened by perceiving a positive relationship with God, feeling close to him, and being convinced about his support (Exline et al., 2021; Ferguson et al., 2010; Knabb & Vazquez, 2018; Monroe & Jankowski, 2016). For example, in a group of fifteen Roman Catholics, ten weekly two-hour group sessions and individual practice of prayer twice daily decreased stress and increased their collaborative relationship with God (Ferguson et al., 2010). In another study, prayer intervention shows increased perceived closeness to God, which decreases psychological distress by increasing positive affect (Monroe & Jankowski, 2016). Also, in Chilean students, the direct negative effect of prayer on stress was observed only in a group of students with a perception of a close bond with God (Wnuk, 2023b).

Considering the above, prayer is indirectly and negatively related to stress via God's support (Hypothesis 2). Based on Wnuk's (2023b) research, I assume that without convincement of God's effective intervention, prayer is not a sufficient way to successfully cope with stressful situations.

Hope, Stress, and Well-being – Alcohol Dependence Context

Hope has a significant meaning in the psychology of addictions as a factor that prevents substance use and misuse (Brooks et al., 2016), protects against relapse (Gutierrez et al., 2020), and facilitates recovery (Wnuk, 2021b; Wnuk & Charzyńska, 2022).

Hope is identified as a method of coping (Korner, 1970) directly related to well-being (Wnuk, 2023a, 2021d; Wnuk & Charzyńska, 2022). Hope can be also indirectly connected with well-being through the different types of stress, such as COVID-19 stress (Gallagher et al., 2021; Nooripour et al., 2021) or post-traumatic stress disorder (Gallagher et al., 2020; Glass et al., 2009). For example, in the study of Umphrey and Sherblom (2018), hope indirectly improved life satisfaction through stress reduction. Similarly, in longitudinal research of individuals with multiple sclerosis, the stress-buffering effect of hope has been revealed (Madan & Pakenham, 2014). Among participants with a low level of hope, stress was negatively correlated with positive affect and a positive state of mind and positively related to depression and anxiety. In a group of patients with a high level of hope, these relationships were

irrelevant. Furthermore, the mediating role of stress in the relationships between hope and adjustment indicators has been confirmed (Umphrey & Sherblom, 2018).

The positive function of hope for the well-being of dependent individuals has been confirmed in mutual-aid groups based on the twelve-step program of AA (Gutierrez, 2019; Magura et al., 2003; Mathis et al., 2009; May et al., 2015; Wnuk, 2021c), SA (Wnuk & Charzyńska, 2022), and Al-Anon (Wnuk, 2022b). For example, among individuals with obsessive-compulsive sexual disorder from Poland participating in SA, hope was considered a predictor of life satisfaction (Wnuk & Charzyńska, 2022). Similarly, among Polish members of the AA, hope was negatively correlated with the cognitive aspect of depression (Wnuk, 2021c).

In addition, the role of coping with stress in the adjustment of substance-dependent individuals was considered a significant factor in the recovery process (Gąsior et al., 2016; Kelly et al., 2010; LaBelle & Edelstein, 2018; Moos, 2008). Among Polish alcohol-dependent individuals, ineffective coping with stress strategies was positively related to alcohol craving, both directly and indirectly, through life satisfaction (Gąsior et al., 2016). Analogously effective coping styles were negatively and indirectly related to life satisfaction and directly related to alcohol cravings. Moreover, LaBelle and Edelstein (2018) found that in AA and Narcotics Anonymous, stress has a detrimental effect on participants' recovery outcomes. In their research, stress was negatively correlated to gratitude, post-traumatic growth, social support, and health symptoms.

Accordingly, among AA participants from Poland, hope is directly and indirectly, positively related to life satisfaction through stress (Hypothesis 3). In this hypothesis, I assume the existence of two potential mechanisms underlying the relationship between hope and life satisfaction, direct and indirect, through effective coping with stress. This means that hope is probably a sufficient factor in potentially improving life satisfaction but additionally can fill this function through stress reduction.

Based on the above three mechanisms, the underpinning relationship between prayer and the life satisfaction of alcohol-dependent AA participants was anticipated.

In the first one, prayer is an antecedent of God's support indirectly related to hope, which in turn is a life satisfaction predictor (Hypothesis 4). This means that hope is a positive predictor of life satisfaction, being a consequence of prayer, in which God's support is necessary to achieve this aim. This hypothesis is based on outcomes of recent research (Wnuk, 2023a), where the assistance of God resulting from prayer was indirectly, through

hope positively related to life satisfaction and positive affect and negatively predicted negative affect.

In the second one, prayer is indirectly related to stress through God's support, and stress, in turn, negatively predicts life satisfaction (Hypothesis 5). Within this hypothesis, for potential enhancement of life satisfaction resulting from effective dealing with stress, during prayer practices, convincement of God's support is needed. Previous studies indicated that positive ties with God are crucial for the prayer stress reduction function, which, in turn, predicts subjective well-being (Wnuk, 2023b).

Finally, the third one refers to prayer as indirectly related to hope through God's support, and hope, in turn, is indirectly related to life satisfaction through stress (Hypothesis 6). This hypothesis is developing of Hypothesis 4 adds to it an element coping with stress in the indirect connection between hope and life satisfaction, showing that instilled hope can lead to better life satisfaction without and thanks to dealing with stress.

Method

Participants

The study was conducted on 115 alcohol-dependent individuals from Poland participating in the AA. The sample was not selected randomly. Participants were the members of chosen AA groups from Poznań in Poland. Among those available in Poznań AA meetings, questionnaires were randomly provided to 20 groups by a psychologist, before the meetings of particular groups and were collected a week later during the next meeting. All subjects expressed their consent to participate in the research and signed it in the questionnaire.

Demographics

Participant demographic variables are presented in Table 1.

The mean age of the subjects was 50.00 years ($SD = 10.8$). The mean abstinence duration was 6.05 years ($SD = 6.03$), and the mean length of AA attendance was 8.41 years ($SD = 7.57$). Every participant declared a Roman Catholic affiliation. The majority of participants were men (79.1%) with high school education (57.4%).

Table 1: Sociodemographics statistics in a sample of Alcoholics Anonymous (N=115)

	Classification	Number	Percentage or mean
Sex	Men	91	79.1%
	Women	24	20.9%
Age			50 years
Education	Primary education	3	2.6%
	Occupational education	23	20%
	High school education	66	57.4%
	University education	23	20%
Duration of Alcoholics Anonymous			5.61 years
Number of friends			6.27

Measures

Prayer

The frequency of prayer was verified through the question “How often do you pray” with the following responses: *never* (1), *sometimes* (2), *once a month* (3), *once a week* (4), and *every day* (5).

God’s Support

To measure God’s support, seven items regarding this dimension from the Polish language version of the Religious Support Scale (RSS) (Wnuk, 2021d) were employed. The RSS is a measure consisting of 21 items that encompass three dimensions of religious support: congregational support, church leader support, and God’s support (Fiala et al., 2002). Participants responded on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale’s reliability via the α -Cronbach coefficient was 0.91 for congregational support, 0.75 for God’s support, and 0.9 for church leader support (Fiala et al., 2002). In this research, God’s support scale reliability was α -Cronbach 0.92 .

Hope

The Polish version (Wnuk & Marcinkowski, 2014) of the Herth Hope Index (HHI; Herth, 1992) was applied to verify the level of hope. The HHI consists of 12 items encompassing three subscales: temporality and future, positive readiness and expectancy, and interconnectedness. Participants responded on a four-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly*

agree). More points indicate a higher level of hope. The reliability of HHI was α -Cronbach 0.8.

Stress

Stress was verified using a tool applied in the National Health Interview Survey (US Centers for Disease Control, 2018). This measure contains six items about negative feelings of irritation, worthlessness, hopelessness, or sadness. Participants answered on a five-point scale consisting of *never*, *rarely*, *usually*, *often*, and *always*. The reliability of this tool measured by α -Cronbach coefficient was 0.97.

Life Satisfaction

Life satisfaction was assessed using the Polish adaptation (Jankowski, 2015) of the Satisfaction with Life Scale (Diener et al., 1985). This measure consists of five statements that are graded according to a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The higher the points, the more satisfied the respondent is with life. The unidimensional character of this tool has been confirmed to be the same as its good reliability (Pavot & Diener, 2008). In this study, the reliability measured by α -Cronbach was 0.85.

Domain Satisfaction

Satisfaction with particular domains of life was verified through Czapinski's questions from "Social Diagnosis" (Czapinski & Panek, 2007). Satisfaction with the following areas of life was assessed: relationships with the family, relationships with colleagues, health, spending leisure time, and life achievements. Participants responded on a seven-point scale ranging from 1 (*maximum unsatisfied*) to 7 (*maximum satisfied*). The reliability of this latent variable, which consists of satisfaction with five domains of life as indicators, was 0.81 α -Cronbach coefficient.

Abstinence Duration

On the question regarding the length of abstinence, the participants reported the number of years they had stayed in abstinence, counting from the last time they drank alcohol.

Research Conception

Following Diener's (1984) conception of subjective well-being in the study, the cognitive aspect of subjective well-being was tested, which is reflected

through two variables: life satisfaction and satisfaction with domains of life, such as satisfaction with relationships with colleagues, satisfaction with relationships with closest ones, satisfaction with achievements, satisfaction with the ways of spending leisure time, and satisfaction with the state of health. Abstinence duration was the only control variable. It was assumed that prayer is indirectly related to stress and hope through God's support, and hope, in turn, is indirectly related to life satisfaction through stress.

Statistical Analysis

In the first step of the analysis, a power analysis was conducted to verify whether the sample size was large enough, and in the next step, common method bias was examined by Harman's single-factor solution.

Path analysis in the structural equations modelling (SEM) was used to verify the research hypotheses. Indirect effects were examined through bootstrapping with 5,000 subsamples and a 95% bias-corrected confidence interval (Hayes, 2013). The following indicators of model fit were applied: Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean of Squared Residual (SRMR). Given the relatively small sample size, the Bollen–Stine bootstrapping method was used to increase the likelihood of veracity of the obtained results.

Results

Preliminary Analysis

A power analysis was conducted to assess the adequate sample size. At a power of 0.8, a medium-size effect of 0.15, and an alpha of 0.05, the sample size result was 92. From this perspective, and considering that the research sample had 115 individuals, this sample size was sufficiently large.

Harman's single-factor test was used to verify common method bias. The Kaiser–Meyer–Olkin statistic was 0.792 ($\chi^2 = 417.08$; $df = 55$; $p < 0.001$), which is higher than the acceptance level of 0.6 (MacCallum et al., 1999), indicating that the data is suited for factor analysis. Confirmatory factor analysis with one not-rotated factor confirmed that the data had no common method bias. The one-factor solution explained the 37.98% variance, which is less than an acceptable threshold, which is more than 40% (Podsakoff et al., 2003).

Descriptive statistics are presented in Table 2. Table 3 shows the results of r-Pearson correlations.

Table 2: Descriptives statistics in a sample of Alcoholics Anonymous (N = 115)

Variable	Minimum	Maximum	Mean	Standard deviation	Skewness	Kurtosis
Life satisfaction	5	25	16.56	4.01	-.39	.9
Satisfaction with relationship with colleagues	1	7	5.27	1.32	-.88	-.01
Satisfaction with relationships with closest ones	1	7	5.02	1.53	-.62	-.3
Satisfaction with achievements	1	7	4.55	1.32	-.25	-.56
Satisfaction with the ways spending leisure time	1	7	4.77	1.63	-.52	-.44
Satisfaction with the state of health	2	7	4.88	1.33	-.25	-.043
God's support	7	53	28	7.21	-1.56	2.1
Stress	8	26	12.24	3.77	1.56	2.38
Hope	0	48	37	6	-2.1	9.97
Abstinence duration	0	26	5.61	5.78	1.26	0.99
Frequency of prayer	1	5	3.53	1.64	-0.50	-1.6
Age	23	73	50.03	10.70	-0.43	-0.39

Table 3: Values of r-Pearson correlation coefficients between research variables (N = 115)

1. Life satisfaction	1	2	3	4	5	6	7	8	9	10
2. Satisfaction with relationship with colleagues	.39**									
3. Satisfaction with relationships with closest ones	.55**	.46**								
4. Satisfaction with achievements	.55**	.52**	.54**							
5. Satisfaction with the ways of spending leisure time	.44**	.48**	.50**	.52**						
6. Satisfaction with the state of health	.41**	.42**	.40**	.54**	.28**					
7. God's support	.30**	.16	.15	.11	.22*	.25**				
8. Stress	-.47**	-.27**	-.30**	-.42**	-.47**	-.23*	-.23*			
9. Hope	.36**	.19*	.23*	.21*	.18	.19*	.30**	-.31**		
10. Frequency of prayer	.30**	.03	.21*	.03	.07	.09	.60**	-.06	.08	
11. Abstinence duration	.44**	.18	.36**	.27**	.20*	.23*	.20*	-.30**	.11	.18

* $p < .05$, ** $p < .01$,

Life satisfaction correlated with all research variables. Satisfaction with every domain of life correlated positively with each other and negatively with stress. Except for satisfaction with the ways of spending leisure time, other indicators of satisfaction with domains of life correlated positively with hope, and except for satisfaction with relationship with colleagues also with abstinence duration. God's support was negatively related to stress and positively connected with hope, prayer, abstinence duration, and satisfaction with two domains of life: the ways of spending leisure time and the state of health. Prayer correlated only with satisfaction with one domain of life: satisfaction with relationships with the closest ones, and this connection was positive. Prayer was not related to hope and abstinence duration, and hope was not correlated with abstinence duration.

Path model

Given the lack of significant problems with normal distribution, due to the fact that the range of result skewness of the study variables was found to be between -3 and 3 , which was the same as kurtoses from -10 to 10 (Brown, 2006), the maximum likelihood method of SEM was applied. In addition, besides the conceptual model, the alternative model with a direct path from prayer to hope, stress, life satisfaction, and satisfaction with different life domains, as well as direct paths from God's support to life satisfaction and satisfaction with different life domains, was tested. Although this model had a good fit with the data ($\chi^2[31] = 44.16$; $p = 0.059$; CMIN/df = 1.42; CFI = 0.96; TLI = 0.94; GFI = 0.94; RMSEA = 0.061 (90% CI [0.000, 0.099]); SRMR = 0.0495, the paths prayer-hope (95% CI $[-0.34, 0.11]$; $p = 0.271$; $\beta = -0.14$), prayer-stress (95% CI $[-0.13, 0.28]$; $p = 0.499$; $\beta = 0.08$), and prayer-satisfaction (95% CI $[-0.21, 0.26]$; $p = 0.899$; $\beta = 0.01$) with different life domains were statistically irrelevant, which were the same as the paths God's support-life satisfaction (95% CI $[-0.24, 0.17]$; $p = 0.687$; $\beta = -0.04$) and God's support-satisfaction with different life domains (95% CI $[-0.14, 0.25]$; $p = 0.603$; $\beta = 0.06$). In comparison to the model reflecting the research hypotheses, only one additional path between prayer and life satisfaction was statistically significant (95% CI $[0.03, 0.46]$; $p = 0.027$; $\beta = 0.24$).

Furthermore, the conceptual model fits well with the data ($\chi^2[37] = 56.62$; $p = 0.020$; CMIN/df = 1.53; CFI = 0.95; TLI = 0.92; GFI = 0.92; RMSEA = 0.068 (90% CI $[0.027, 0.102]$); SRMR = 0.0585. Comparing this model with the alternative model but rejecting the irrelevant paths from the model and adding the significant path between prayer and life satisfaction showed that the alternative model is better suited to the data. In other words, a conceptual model was nested as an alternative model, which had an additional direct

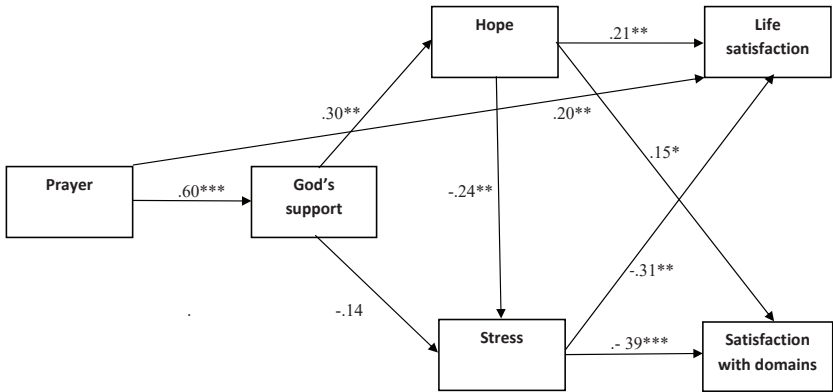


Figure 1: Path analysis results

Note: The standardized regression coefficients are presented. * $p < .05$, ** $p < .01$, *** $p < .001$. For the sake of legibility, the correlations between the residuals were omitted in Figure 1. The model was controlled for abstinence duration (a positive relationship between abstinence duration and life satisfaction was noted ($r = .28$, $p < .001$) and abstinence duration and satisfaction with different domains of life ($r = .23$, $p = .003$) $N = 115$. (Source: author's research)

path from prayer to life satisfaction, and the differences between them were statistically significant and much more than the demanded value ($\chi^2_{crit} [df = 1] = 3.84$; $p < 0.05$), which was $\chi^2 = 56.62 - 47.26 = 9.36$, $df = 37 - 36 = 1$.

In addition, the data of the model was confirmed to fit well with one additional direct path between prayer and life satisfaction (see Figure 1) ($\chi^2[36] = 47.27$; $p = 0.099$; CMIN/df = 1.31; CFI = 0.97; TLI = 0.95; GFI = 0.93; RMSEA = 0.052 (90% CI [0.000, 0.090]) SRMR = 0.053.

Moreover, the Bollen–Stine bootstrapping method results ($p = 0.23$) proved that the model was a good fit for the data.

The results of the direct and indirect effects are presented in Tables 4 and 5.

Prayer was statistically significantly directly related to life satisfaction and indirectly related to the path of God's support-hope and God's support-hope-distress. The same indirect effects of prayer on satisfaction with different domains of life were noted. God's support was directly related to hope but not to stress and indirectly through hope and the path of hope-distress linked to life satisfaction and satisfaction with different domains of life. Hope was also directly and indirectly – via stress – related to life satisfaction and satisfaction with different domains of life.

Table 4: Results of direct effects for 95% interval

Pathway	Value of effect	<i>p</i>	LLCI	ULCI
Prayer – God's support	0.597	0.000	0.046	0.700
Prayer – life satisfaction	0.202	0.003	0.007	0.034
God's support – hope	0.298	0.001	0.136	0.464
God's support – stress	0.173	0.137	–0.354	0.067
Hope – stress	–0.242	0.003	–0.474	–0.070
Hope – life satisfaction	0.231	0.001	0.109	0.374
Hope – satisfaction with different domains of life	0.149	0.042	0.005	0.339
Stress – life satisfaction	–0.305	0.001	–0.459	–0.148
Stress – satisfaction with different domains of life	–0.388	0.000	–0.542	–0.233
Abstinence duration – life satisfaction	0.283	0.000	0.146	0.415
Abstinence duration – satisfaction with different domains of life	0.227	0.003	0.067	0.374

LLCI = 95% confidence interval (low); ULCI = 95% confidence interval (high).

Table 5: Results of indirect effects for 95% interval

Pathway	Value of effect	<i>p</i>	LLCI	ULCI
Prayer – God's support – hope – life satisfaction	0.093	0.001	0.030	0.240
Prayer – God's support – hope – stress – life satisfaction	0.032	0.002	0.006	0.109
Prayer – God's support – hope – domains satisfaction	0.019	0.043	0.000	0.066
Prayer – God's support – hope – stress – domains satisfaction	0.012	0.003	0.002	0.038
Prayer – God's support – hope	0.178	0.001	0.087	0.295
Prayer – God's support – hope – stress	–0.125	0.046	–0.263	–0.002
God's support – hope – stress	–0.072	0.003	–0.202	–0.016
God's support – hope – life satisfaction	0.128	0.002	0.024	0.155
God's support – hope – stress – domains satisfaction	0.126	0.012	0.014	0.160
Hope – stress – life satisfaction	0.074	0.002	0.020	0.170
Hope – stress – domains satisfaction	0.094	0.002	0.027	0.202

LLCI = 95% confidence interval (low); ULCI = 95% confidence interval (high).

Discussion

This study aimed to examine the underlying mechanisms regarding the relationship between prayer and the life satisfaction of alcohol-dependent members of mutual-aid groups from Poland. Life satisfaction was verified using one measurable indicator of overall life satisfaction and one latent variable consisting of five indicators of different domains of life.

Hypothesis 1 anticipated that prayer is indirectly related to hope through God's support. This shows that for AA members, prayer serves as a spiritual practice, and one of its functions in receiving God's support is to facilitate finding hope in crisis and difficult situations that occur because of suffering from alcohol dependence.

This finding corresponds with previous studies in different twelve-step fellowships, such as SA (Wnuk & Charzyńska, 2022), SLAA (Wnuk, 2017), or Al-Anon (Wnuk, 2022b), indicating that religious-spiritual involvement, regardless of its manifestation, is a beneficial factor for hope. These outcomes are also consistent with recent studies conducted on non-mutual-aid groups, such as those on students from Chile (Wnuk, 2023a). The same finding was observed in a sample of SLAA participants (Wnuk, 2017) and among Chilean students (Wnuk, 2023a), in which connection and trust with the sacred was a condition for hope during praying. This finding confirms that this spiritual activity can be effective in regaining hope if a strong belief regarding God's intervention exists (Exline et al., 2021).

More importantly, prayer can be used not only within the twelve-step program engagement as a tool to build a relationship with God and spiritual growth but can also fill the same function in a religious context as a way to worship God. In both cases, prayer is a useful way to develop spirituality. Prayer within involvement in AA is a manifestation of secular spirituality; however, in a religious and devotional context, it is considered religious spirituality expression (Wnuk, 2021a). Although these two different ways of achieving spiritual growth in the mutual-aid support groups of Poland are not correlated (Wnuk, 2021a), the phenomenon of praying joins these two secular and religious realities in one spiritual construct, which is wider than religiosity (Wnuk, 2023a), and its reflections in AA philosophy (Alcoholics Anonymous, 2001).

Hypothesis 2, which regards prayer as indirectly related to stress via God's support, is not supported. Prayer was not indirectly linked through God's support with stress. This implies that in a sample of AA from Poland, prayer is correlated with the feeling of receiving God's support. However, this experience of involving God and his intervention is not a sufficient factor for effectively dealing with stress. In contrast, the pathway between prayer and

stress is highly complex, and God's support demands hope. Hypothesis 3 about hope as directly and indirectly related – via stress – to life satisfaction and satisfaction with domains of life was supported. This is consistent with previous research confirming the beneficial function of hope in life satisfaction in two ways: directly and indirectly due to decreased levels of stress (Umphrey & Sherblom, 2018). The role of hope as an effective way of coping (Korner, 1970) and stress-buffering factor has been confirmed not only in the case of a specific source of stress, such as COVID-19 stress (Gallagher et al., 2021; Nooripour et al., 2021) or post-traumatic stress disorder (Gallagher et al., 2020; Glass et al., 2009), but also in reference to typical and ordinary daily stressful situations (Umphrey & Sherblom, 2018).

Moreover, the positive role of hope and the harmful influence of stress on life satisfaction and successful treatment has been confirmed in alcohol-dependent individuals (Gąsior et al., 2016; Gutierrez, 2019; Kelly et al., 2010; LaBelle & Edelstein, 2018; Magura et al., 2003; Mathis et al., 2009; May et al., 2015; Moos, 2008; Wnuk, 2021c). The same finding has been observed in other twelve-step program fellowships in Poland, such as Sexaholics Anonymous (Wnuk & Charzyńska, 2022) and Al-Anon (Wnuk, 2022b), in which hope predicted life satisfaction. In the same vein, stress and ineffective ways of dealing with stress were correlated with negative outcomes (Gąsior et al., 2016; LaBelle & Edelstein, 2018), such as low life satisfaction and poor satisfaction with relationships with colleagues, satisfaction with health, satisfaction with family relationships, satisfaction with life achievement, and spending leisure time.

Unexpectedly, prayer was directly positively correlated with life satisfaction, but its connection with satisfaction with particular areas of life was irrelevant. Besides the anticipated mechanisms that underpin the relationship between prayer and life satisfaction, a direct link between these variables still exists.

Besides this identified direct mechanism, three other mechanisms were explored. The first one reflected in Hypothesis 4 was fully supported. Prayer was an antecedent of God's support, and through this variable, it was indirectly related to hope, which in turn positively predicted life satisfaction. Furthermore, a highly complex mechanism with stress function was confirmed. According to Hypothesis 6, hope as a consequence of God's support because of prayer was not only directly related to life satisfaction and satisfaction with domains of life but also indirectly through stress.

In Hypothesis 5, regarding prayer and life satisfaction, the indirect relationship through the pathway of God's support and stress was not supported

due to the lack of a statistically significant association between God's support and stress.

The outcomes obtained can be interpreted within social learning theory (Smith, 2021). AA participants from Poland can be encouraged to pray by their colleagues as representatives of self-aid group support, which follows the suggestions of the twelve-step program (Alcoholics Anonymous World Services, 1981). In addition, as believers, they use this practice due to religious involvement. Building a relationship with God and receiving his support are the aims of AA (Alcoholics Anonymous World Services, 1981) and Roman Catholic Church representatives. Due to the high population rate, many alcohol-dependent individuals from Poland have declared religious affiliation and God's important role in their lives (Pew Research Center, 2022). They also fill the roles of AA and Roman Catholic Church members.

This attitude focus on prayer can be modeled and strengthened in sponsorship relations. Both the sponsor and sponsee can share these prayer practices as a method to achieve sobriety and be awarded for facilitating hope and effective coping with stress as a result of prayer.

It is important to notice that, due to the small study sample, sex as a potential moderator in the relationship between prayer and life satisfaction was not examined. Recent studies have emphasized that participation in Alcoholics Anonymous and the recovery process differ in sex (Krentzman et al., 2012; Timko et al., 2005). In one study, memberships in AA increased participants' odds of achieving a year of abstinence and this relationship was stronger in women in comparison to men (Krentzman et al., 2012). In research conducted among 600 individuals from Poland diagnosed with Sclerosis Multiplex sex moderated the link between religious meaning and happiness (Wnuk et al., 2022). Among women religion as a source of significance, purpose, and direction was positively related to happiness, but in the group of men, this relationship was irrelevant. These research results have some theoretical and practical implications. Besides the direct link between prayer and life satisfaction, the other two psycho-spiritual indirect mechanisms regarding the connection between these variables were confirmed. The first one is based on the image of a supportive God resulting from prayer, which in turn leads to hope as a predictor of life satisfaction and satisfaction with different domains of life. The second one involves stress as an element between hope and life satisfaction, indicating that the link between hope and life satisfaction is not only direct but also indirect via stress.

From a practical standpoint, in a group of religious-affiliated Polish participants of Alcoholics Anonymous, praying should be recommended as a potentially effective method for improving life satisfaction in connection with

perceiving God as a source of support. Especially for believers, this spiritual practice can also be used in a religious context as a way to find hope and cope with stress. Prayer and meditation should be implemented in a therapeutic program addressed to alcohol-dependent individuals who are open and/or familiar with these practices to shape the relationship with a higher power. Also, counselors, therapists, or social workers can enhance this group of individuals to pray as a way to shape a positive relationship with God and use it as an effective coping method and antecedent of hope in difficult life circumstances, especially in relapses.

Furthermore, hope and coping with stress-centered therapeutic interventions should be applied to this group of clients to facilitate recovery and enhance well-being. The results of recent studies regarding this issue are promising, indicating that hope-focused therapy is an effective way of reducing stress (Rahimi et al., 2021) and depressive symptoms (Rahimi et al., 2021; Retnowati et al., 2015).

Limitations and Future Research

This research has some limitations. The results can be generalized to alcohol-dependent AA participants from urban areas, mostly men who are Polish and Roman Catholics. There are usually no self-help groups in Poland's countryside. One reason is that in villages, alcohol-dependent individuals live in a closed society where people know each other and are not anonymous. It can make them fear being stigmatized by other representatives of the community in which they live. The lack of sex balance is because, in women, it is still a problem connected with shame and social stigma. Compared to men, women are more prone to hide alcohol abuse and less likely to search for social support to deal with that. Also, in Poland, women are more religious than men, and their religion as a meaning-oriented system is positively related to happiness and does not play this role among men, confirming the moderating function of sex in the link between religiosity and well-being indicators (Wnuk et al., 2022). Further research on alcohol-dependent Polish women is needed to explore the function of prayer in the recovery process and their life satisfaction.

Studies in other cultural contexts among diverse samples in reference to religious denominations and less religious than Poles are necessary. The selection of the sample was not random, and this fact could have an impact on the research result. Also, the low response indicator for questionnaires, which was 57.5%, could influence the outcomes. Although the direction between variables was substantiated, the research design does not allow the interpretation of the results from the cause-and-effect perspective. Only future longitudinal

studies can provide a chance to confirm the discovered mechanisms. An increased sample size can be an opportunity to verify potential moderators, such as sex. Besides prayer, exploring additional spiritual practices, such as meditation, and their role in shaping hope and coping with stress can lead to interesting results. Moreover, different prayer types (Masters et al., 2022) should be employed to verify not only the frequency of praying but also the beneficial influence of the kind of spiritual practice on Alcoholics Anonymous participants. Following this idea, this type of research should be conducted not only among alcohol-dependent individuals but also among other addicted participants of mutual-aid support groups.

Acknowledgements

The author of this publication declares that he has no conflict of interest.

This study was funded by author sources

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

References

- Achour, M., Binti Abdul Ghani Azmi, I., Bin Isahak, M., Mohd Nor, M. R., & Mohd Yusoff, M. (2019). Job stress and nurses well-Being: Prayer and age as moderators. *Community Mental Health Journal*, 55(7), 1226–1235. <https://doi.org/10.1007/s10597-019-00410-y>
- Ai, A. L., Dunkle, R. E., Peterson, C., & Bolling, S. F. (1998). The role of private prayer in psychosocial recovery among midlife and aged patients following cardiac surgery. *The Gerontologist*, 38, 591–601. <https://doi.org/10.1093/geront/38.5.591>
- Ai, A. L., Wink, P., Tice, T. N., Bolling, S. F., Wasin, A., & Shearer, M. (2009). Prayer and reverence in naturalistic, aesthetic, and socio-moral contexts predicted fewer complications following coronary artery bypass. *Journal of Behavioral Medicine*, 32, 570–581. <https://doi.org/10.1007/s10865-009-9228-1>
- Ai, A. L., Ladd, K. L., Peterson, C., Cook, C. A., Shearer, M., & Koenig, H. G. (2010). Long-term adjustment after surviving open heart surgery: The effect of using prayer for coping replicated in a prospective design. *The Gerontologist*, 50(6), 798–809. <https://doi.org/10.1093/geront/gnq046>
- Alcoholics Anonymous (AA). (2001). *Alcoholics Anonymous*. New York: Alcoholics Anonymous World Services, Inc.
- Alcoholics Anonymous World Services. (1981). *Twelve Steps and Twelve Traditions*. New York, NY: Alcoholics Anonymous World Services, Inc.
- Baesler, E. J., Derlega, V. J., Winstead, B. A., & Barbee, A. (2003). Prayer as interpersonal coping in the lives of mothers with HIV. *Women & Therapy*, 26(3–4), 283–295. https://doi.org/10.1300/J015v26n03_07
- Breslin, M. J., & Lewis, C. A. (2008). Theoretical models of the nature of prayer and health: A review. *Mental Health, Religion & Culture*, 11(1), 9–21. <https://doi.org/10.1080/>

13674670701491449

- Brooks, M. J., Marshal, M. P., McCauley, H. L., Douaihy, A., & Miller, E. (2016). The relationship between hope and adolescent likelihood to endorse substance use behaviors in a sample of marginalized youth. *Substance Use & Misuse*, 51(13), 1815–1819. <https://doi.org/10.1080/10826084.2016.1197268>
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.
- Brown, G., & Jong, J. P. (2020). Prayer in cancer: What the patients said. *Health and Social Care Chaplaincy*, 8, 27–43. <https://doi.org/10.1558/hsc.37067>
- Carroll, S. (1993). Spirituality and purpose in life in alcoholism recovery. *Journal of Studies on Alcohol*, 54(3), 297–301. <https://doi.org/10.15288/jsa.1993.54.297>
- Champagne-Langabeer, T., Cohen, A. S., Lopez, A., Bakos-Block, C., Campbell, A., Gopal, B., Cardenas-Turanzas, M., Poudel, A., Ratcliff, C., Malik, A., & Korupolu, R. (2025). Assessing barriers to meditation in patients with substance use disorder. *Complementary Therapies in Clinical Practice*, 59, 101957. Advance online publication. <https://doi.org/10.1016/j.ctcp.2025.101957>
- Cooper, D. C., Thayer, J. F., & Waldstein, S. R. (2014). Coping with racism: The impact of prayer on cardiovascular reactivity and post-stress recovery in African American women. *Annals of Behavioral Medicine*, 47(2), 218–230. <https://doi.org/10.1007/s12160-013-9540-4>
- Curlee, M. S., & Ahrens, A. H. (2025). Contemplative prayer during the COVID-19 pandemic: An exploratory analysis of the examen for life during COVID-19 among Christian participants. *Psychology of Religion and Spirituality*. Advance online publication. <https://doi.org/10.1037/rel0000553>
- Czapinski, J., & Panek, T. (2007). Social diagnosis 2007. In J. Czapinski & T. Panek (Eds.), *Social diagnosis* (pp. 1–237). Warsaw, Poland: Council for Social Monitoring.
- Day, E., Wilkes, S., & Copello, A. (2003). Spirituality and clinical care. Spirituality is not everyone's cup of tea for treating addiction. *BMJ (Clinical research ed.)*, 326(7394), 881.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542–575. <https://doi.org/10.1037/0033-2909.95.3.542>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Exline, J. J., Wilt, J. A., Harriott, V. A., Pargament, K. I., & Hall, T. W. (2021). Is God listening to my prayers? Initial validation of a brief measure of perceived divine engagement and disengagement in response to prayer. *Religions*, 12(2), 80. <https://doi.org/10.3390/rel12020080>
- Ferguson, J. K., Willemsen, E. W., & Castañeto, M. V. (2010). Centering prayer as a healing response to everyday stress: A psychological and spiritual process. *Pastoral Psychology*, 59(3), 305–329. <https://doi.org/10.1007/s11089-009-0225-7>
- Fiala, W. E., Bjorck, J. P., & Gorsuch, R. (2002). The Religious Support Scale: Construction, validation and cross-validation. *American Journal of Community Psychology*, 30(6), 761–786. <https://doi.org/10.1023/A:1020264718397>
- Folkman, S. (2010). Stress, coping, and hope. *Psycho-Oncology*, 19(9), 901–908. <https://doi.org/10.1002/pon.1836>
- Foulis, S. J., Rigby, K., Loftus, A., Satchidanand, N., & Holmes, D. M. (2023). Patient-centered addiction medicine: What patients say helps them the most in their recovery – the role of whole-person Healthcare and prayer in opioid addiction recovery. *Current Psychology*, 42, 19196–19207. <https://doi.org/10.1007/s12144-022-03060-8>
- Galanter, M., Josipovic, Z., Dermatis, H., Weber, J., & Millard, M. A. (2017). An initial fMRI study on neural correlates of prayer in members of Alcoholics Anonymous. *The*

- American Journal of Drug and Alcohol Abuse*, 43(1), 44–54. <https://doi.org/10.3109/00952990.2016.1141912>
- Gallagher, M. W., Long, L. J., & Phillips, C. A. (2020). Hope, optimism, self-efficacy, and posttraumatic stress disorder: A meta-analytic review of the protective effects of positive expectancies. *Journal of Clinical Psychology*, 76(3), 329–355. <https://doi.org/10.1002/jclp.22882>
- Gallagher, M. W., Smith, L. J., Richardson, A. L., D'Souza, J. M., & Long, L. J. (2021). Examining the longitudinal effects and potential mechanisms of hope on COVID-19 stress, anxiety, and well-being. *Cognitive Behaviour Therapy*, 50(3), 234–245. <https://doi.org/10.1080/16506073.2021.1877341>
- Gąsior, K., Biedrzycka, A., Chodkiewicz, J., Ziółkowski, M., Czarnecki, D., Juczyński, A., & Nowakowska-Domagala, K. (2016). Alcohol craving in relation to coping with stress and satisfaction with life in the addicted. *Health Psychology Report*, 4(1), 65–78. <https://doi.org/10.5114/hpr.2016.54399>
- Glass, K., Flory, K., Hankin, B. L., Kloos, B., & Turecki, G. (2009). Are coping strategies, social support, and hope associated with psychological distress among Hurricane Katrina survivors? *Journal of Social and Clinical Psychology*, 28(6), 779–795. <https://doi.org/10.1521/jscp.2009.28.6.779>
- Gutierrez, D. (2019). Spiritus contra spiritum: Addiction, hope, and the search for meaning. *Spirituality in Clinical Practice*, 6(4), 229–239. <https://doi.org/10.1037/scp0000201>
- Gutierrez, D., Dorais, S., & Goshorn, J. R. (2020). Recovery as life transformation: Examining the relationships between recovery, hope, and relapse. *Substance Use & Misuse*, 55, 1949–1957. <https://doi.org/10.1080/10826084.2020.1781181>
- Hamilton, J. B., Kweon, L., Brock, L. B., & Moore, A. D. (2020). The use of prayer during life-threatening illness: A connectedness to god, inner-self, and others. *Journal of Religion and Health*, 59(4), 1687–1701. <https://doi.org/10.1007/s10943-019-00809-7>
- Hayes, A.F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Herth, K. (1992). Abbreviated instrument to measure hope: Development and psychometric evaluation. *Journal of Advanced Nursing*, 17(10), 1251–1259. <https://doi.org/10.1111/j.1365-2648.1992.tb01843.x>
- James, W. (1904). *The varieties of religious experience*. London: Longmans, Green, and Co.
- Jankowski, K. S. (2015). Is the shift in chronotype associated with an alteration in well-being? *Biological Rhythm Research*, 46(2), 237–248. <https://doi.org/10.1080/09291016.2014.985000>
- Jeppsen, B., Pössel, P., Black, S. W., Bjerg, A., & Wooldridge, D. (2015). Closeness and control: Exploring the relationship between prayer and mental health. *Counseling and Values*, 60(2), 164–185. <https://doi.org/10.1002/cvj.12012>
- Kelly, J. F., Stout, R. L., Magill, M., Tonigan, J. S., & Pagano, M. E. (2010). Mechanisms of behavior change in alcoholics anonymous: Does Alcoholics Anonymous lead to better alcohol use outcomes by reducing depression symptoms? *Addiction (Abingdon, England)*, 105(4), 626–636. <https://doi.org/10.1111/j.1360-0443.2009.02820.x>
- Knabb, J. J., & Vazquez, V. E. (2018). A randomized controlled trial of a 2-week internet-based contemplative prayer program for Christians with daily stress. *Spirituality in Clinical Practice*, 5(1), 37–53. <https://doi.org/10.1037/scp0000154>
- Korner, I. N. (1970). Hope as a method of coping. *Journal of Consulting and Clinical Psychology*, 34(2), 134–139. <https://doi.org/10.1037/h0029004>
- Koski-Jännes, A., & Turner, N. (1999). Factors influencing recovery from different addictions. *Addiction Research*, 7, 469–492. <https://doi.org/10.3109/16066359909004401>
- Krause, N., & Hayward, R. D. (2013). Prayer beliefs and change in life satisfaction over time.

- Journal of Religion and Health*, 52(2), 674–694. <https://doi.org/10.1007/s10943-012-9638-1>
- Krause, N., & Ironson, G. (2019). Religious involvement, God images, and life satisfaction. *Mental Health, Religion & Culture*, 22(1), 41–55. <https://doi.org/10.1080/13674676.2019.1586860>
- Krause, N., Emmons, R. A., & Ironson, G. (2015). Benevolent images of God, gratitude, and physical health status. *Journal of Religion and Health*, 54(4), 1503–1519. <https://doi.org/10.1007/s10943-015-0063-0>
- Krentzman, A. R., Brower, K. J., Cranford, J. A., Bradley, J. C., & Robinson, E. A. (2012). Gender and extroversion as moderators of the association between Alcoholics Anonymous and sobriety. *Journal of Studies on Alcohol and Drugs*, 73(1), 44–52. <https://doi.org/10.15288/jsad.2012.73.44>
- LaBarbera, R., & Hetzel, J. (2016). Christian educators' use of prayer to cope with stress. *Journal of Religion and Health*, 55(4), 1433–1448. <https://doi.org/10.1007/s10943-015-0118-2>
- LaBelle, O. P., & Edelstein, R. S. (2018). Gratitude, insecure attachment, and positive outcomes among 12-step recovery program participants. *Addiction Research & Theory*, 26(2), 123–132. <https://doi.org/10.1080/16066359.2017.1333111>
- Lawler-Row, K. A. (2010). Forgiveness as a mediator of the religiosity – health relationship. *Psychology of Religion and Spirituality*, 2(1), 1–16. <https://doi.org/10.1037/a0017584>
- Levin, J. S. (1996). How prayer heals: A theoretical model. *Alternative Therapies*, 2, 66–73.
- Levin, J. (2014). Religion and happiness among Israeli Jews: Findings from the ISSP Religion III Survey. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 15(3), 593–611. <https://doi.org/10.1007/s10902-013-9437-8>
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4(1), 84–99. <https://doi.org/10.1037/1082-989X.4.1.84>
- Madan, S., & Pakenham, K. I. (2014). The stress-buffering effects of hope on adjustment to multiple sclerosis. *International Journal of Behavioral Medicine*, 21(6), 877–890. <https://doi.org/10.1007/s12529-013-9384-0>
- Magura, S., Knight, E. L., Vogel, H. S., Mahmood, D., Laudet, A. B., & Rosenblum, A. (2003). Mediators of effectiveness in dual-focus self-help groups. *The American Journal of Drug and Alcohol Abuse*, 29(2), 301–322. <https://doi.org/10.1081/ADA-120020514>
- Masters, K. S., & Spielmanns, G. I. (2007). Prayer and health: Review, meta-analysis, and research agenda. *Journal of Behavioral Medicine*, 30(4), 329–338. <https://doi.org/10.1007/s10865-007-9106-7>
- Masters, K. S., Emerson, R. W. IV, & Hooker, S. A. (2022). Effects of devotional prayer and secular meditation on cardiovascular response to a faith challenge among Christians. *Psychology of Religion and Spirituality*, 14(2), 251–259. <https://doi.org/10.1037/rel0000369>
- Mathis, G. M., Ferrari, J. R., Groh, D. R., & Jason, L. A. (2009). Hope and substance abuse recovery: The impact of agency and pathways within an abstinent communal-living setting. *Journal of Groups in Addiction & Recovery*, 4(1/2), 42–50. <https://doi.org/10.1080/15560350802712389>
- May, E. M., Hunter, B. A., Ferrari, J., Noel, N., & Jason, L. A. (2015). Hope and abstinence self-efficacy: Positive predictors of negative affect in substance abuse recovery. *Community Mental Health Journal*, 51(6), 695–700. <https://doi.org/10.1007/s10597-015-9888-y>
- McCullough, M. E. (1995). Prayer and health: Conceptual issues, research review and research agenda. *Journal of Psychology and Theology*, 23, 15–29.
- McKinley, C. E. (2024). “Prayer is universal”: How integrative faith practices enable Indigenous peoples’ persistence and resistance to transcend historical oppression. *Psychology of Religion and Spirituality*, 16(1), 114–125. <https://doi.org/10.1037/rel0000497>
- Miranda, T. P. S., Caldeira, S., de Oliveira, H. F., Iunes, D. H., Nogueira, D. A., Chaves, E. C. L., & de Carvalho, E. C. (2020). Intercessory prayer on spiritual distress, spiritual

- coping, anxiety, depression and salivary amylase in breast cancer patients during radiotherapy: Randomized clinical trial. *Journal of Religion and Health*, 59(1), 365–380. <https://doi.org/10.1007/s10943-019-00827-5>
- Monroe, N., & Jankowski, P. J. (2016). The effectiveness of a prayer intervention in promoting change in perceived attachment to God, positive affect, and psychological distress. *Spirituality in Clinical Practice*, 3(4), 237–249. <https://doi.org/10.1037/scp0000117>
- Moos R. H. (2008). Active ingredients of substance use-focused self-help groups. *Addiction (Abingdon, England)*, 103(3), 387–396. <https://doi.org/10.1111/j.1360-0443.2007.02111.x>
- Nooripour, R., Hosseini, S., Hussain, A. J., Annabestani, M., Maadal, A., Radwin, L. E., Hassani-Abhari, P., Pirkashani, N. G., & Khoshkonesh, A. (2021). How resiliency and hope can predict stress of covid-19 by mediating role of spiritual well-being based on machine learning. *Journal of Religion and Health*, 60(4), 2306–2321. <https://doi.org/10.1007/s10943-020-01151-z>
- Pavot, W., & Diener, E. (2008). The Satisfaction With Life Scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, 3(2), 137–152. <https://doi.org/10.1080/17439760701756946>
- Petrova, H., Zavarzina, O. O., Kytianova, I. P., & Kozyakov, R. V. (2015). Social and personal factors of stable remission for people with drug addictions. *Psychology in Russia*, 8, 126–138. <https://doi.org/10.11621/pir.2015.0411>
- Pew Research Center. (2022). *The global Good divide*. <https://www.pewresearch.org/global/2020/07/20/the-global-god-divide/> (accessed on 9 November 2022).
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Rahimi, R., Hasanpour, S., Mirghafourvand, M., & Esmaeilpour, K. (2021). Effect of Hope-oriented group counseling on mental health of infertile women with failed IVF cycles: A randomized controlled trial. *BMC Psychiatry*, 21(1), 286. <https://doi.org/10.1186/s12888-021-03280-5>
- Retnowati, S., Ramadiyanti, D.W., Suciati, A.A., Sokang, Y.A., & Viola, H.Z. (2015). Hope intervention against depression in the survivors of cold lava flood from Merapi Mount. *Procedia – Social and Behavioral Sciences*, 165, 170–178. <https://doi.org/10.1016/j.sbspro.2014.12.619>
- Roh, S., Burnette, C. E., & Lee, Y. S. (2018). Prayer and faith: Spiritual coping among american indian women cancer survivors. *Health & Social Work*, 43(3), 185–192. <https://doi.org/10.1093/hsw/hly015>
- Shults F. L., & Sandage S. J. (2006). *Transforming spirituality: Integrating theology and psychology*. Grand Rapids, MI: Baker Academic.
- Smith M. A. (2021). Social learning and addiction. *Behavioural Brain Research*, 398, 112954. <https://doi.org/10.1016/j.bbr.2020.112954>
- Spilka, B., & Ladd, K. L. (2013). *The psychology of prayer: A scientific approach*. New York: The Guilford Press.
- Suryanto, Y. I., Agustini, D., & Sofro, Z. M. (2024). The effect of Taizé prayer on stress and stress resilience of young adults in nonclinical settings. *Pastoral Psychology*, 73(3), 305–317. <https://doi.org/10.1007/s11089-024-01144-9>
- Timko, C., Finney, J. W., & Moos, R. H. (2005). The 8-Year Course of Alcohol Abuse: Gender Differences in Social Context and Coping. *Alcoholism: Clinical and Experimental Research*, 29(4), 612–621. <https://doi.org/10.1097/01.ALC.0000158832.07705.22>
- Umphrey, L. R., & Sherblom, J. C. (2018). The constitutive relationship of listening to hope, emotional intelligence, stress, and life satisfaction. *International Journal of Listening*,

- 32(1), 24–48. <https://doi.org/10.1080/10904018.2017.1297237>
- US Centers for Disease Control. (2018). National Health Interview Survey. <http://www.cdc.gov/nchs/nhis.htm> (accessed on 10 October 2022).
- Watts, F. (2001). Prayer and psychology. In F. Watts (Ed.), *Perspective on prayer* (pp. 39–52). Chippenham, UK: Rowe.
- Winkeljohn Black, S., Pössel, P., Rosmarin, D. H., Tariq, A., & Jeppsen, B. D. (2017). Prayer type, disclosure, and mental health across religious groups. *Counseling and Values*, 62(2), 216–234. <https://doi.org/10.1002/cvj.12060>
- Wnuk, M. (2017). Spiritual experiences as a mediator between faith as well as religious practices and hope among sex addicted individuals from Poland participating in Sex and Love Addicts Anonymous (SLAA). *Clinical Psychiatry*, 3(2), 14. Available online: <https://www.primescholars.com/articles/spiritual-experiences-as-a-mediator-between-faith-as-well-as-religious-practices-and-hope-among-sex-addicted-individuals-104717.html> (accessed on 22 May 2022).
- Wnuk, M. (2021a). Do Involvement in Alcoholics Anonymous and religiousness both directly and indirectly through meaning in life lead to spiritual experiences? *Religions*, 12(10), 794. <http://dx.doi.org/10.3390/rel12100794>
- Wnuk, M. (2021b). Links between faith and some strengths of character: Religious commitment manifestations as a moderators. *Religions*, 12(9), 786. <http://dx.doi.org/10.3390/rel12090786>
- Wnuk, M. (2021c). Indirect relationship between Alcoholics Anonymous spirituality and their hopelessness: The role of meaning in life, hope, and abstinence duration. *Religions*, 12(11), 934. <https://doi.org/10.3390/rel12110934>
- Wnuk, M. (2021d). Religion and life satisfaction of Polish female students representing roman catholic affiliation: Test of empirical model. *Religions*, 12(8), 597. <http://dx.doi.org/10.3390/rel12080597>
- Wnuk, M. (2022a). The beneficial role of involvement in Alcoholics Anonymous for existential and subjective well-being of alcohol-dependent individuals? The Model Verification. *International Journal of Environmental Research and Public Health*, 19(9), 5173. <https://doi.org/10.3390/ijerph19095173>
- Wnuk, M. (2022b). The mechanism underlying the relationship between the spiritual struggles and life satisfaction of Polish codependent individuals participating in Al-Anon – pilot study. *Journal of Spirituality in Mental Health*. Advance online publication. <https://doi.org/10.1080/19349637.2022.2124141>
- Wnuk, M. (2023a). The indirect relationship between spiritual experiences and subjective wellbeing through hope? A sample of Chilean students. *Journal of Religion and Health*, 62, 964–983. <https://doi.org/10.1007/s10943-021-01459-4>
- Wnuk, M. (2023b). Bond with God as a moderator of the relationship between prayer and stress of Chilean students. *Religions*, 14(3), 345. <http://dx.doi.org/10.3390/rel14030345>
- Wnuk M. (2024). Are religious practices indirectly related to stress at work through the tendency to forgive? A sample of Polish employees. *Journal of Religion and Health*, 63(3), 2259–2275. <https://doi.org/10.1007/s10943-022-01710-6>
- Wnuk, M., & Charzyńska, E. (2022). Involvement in Sexaholics Anonymous and life satisfaction: The mediating role of meaning in life and hope. *Journal of Behavioral Addictions*, 11(2), 544–556. <https://doi.org/10.1556/2006.2022.00024>
- Wnuk, M., & Charzyńska, E. (2024). Does forgiveness underlie the relationship between religiosity and meaning in life among members of Sexaholics Anonymous in Poland? *Journal of Religion and Health*, 63(6), 4215–4231. <https://doi.org/10.1007/s10943-023-01842-3>
- Wnuk, M., & Marcinkowski, J. T. (2014). Do existential variables mediate between

- religious-spiritual facets of functionality and psychological wellbeing? *Journal of Religion and Health*, 53(1), 56–67. <https://doi.org/10.1007/s10943-012-9597-6>
- Wnuk, M., Wilski, M., Szcześniak, M., Bartosik-Psujek, H., Kapica-Topczewska, K., Tarasiuk, J., Czarnowska, A., et al. (2022). Model of the relationship of religiosity and happiness of multiple sclerosis patients from Poland: The role of mediating and moderating variables. *Religions*, 13(9), 862. <http://dx.doi.org/10.3390/rel13090862>
- Yamada, A.-M., Lukoff, D., Lim, C. S. F., & Mancuso, L. L. (2020). Integrating spirituality and mental health: Perspectives of adults receiving public mental health services in California. *Psychology of Religion and Spirituality*, 12(3), 276–287. <https://doi.org/10.1037/rel0000260>
- Zarzycka, B., & Krok, D. (2021). Disclosure to God as a mediator between private prayer and psychological well-being in a Christian sample. *Journal of Religion and Health*, 60(2), 1083–1095. <https://doi.org/10.1007/s10943-020-01107-3>