Persistent Depressive Symptoms in a Population with High Levels of Occupational Stress:

Trajectories Offer Insights to Both Chronicity and Resilience

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Abstract

Religious participation and spirituality are linked to good mental health, yet clergy may experience more depression than observed in the general population. This may be due in part to high job strain. Our objectives were to identify distinct longitudinal trajectories of depressive symptoms in clergy and to identify variables associated with each course. The sample was 1172 clergy followed for up to 66 months. Depressive symptoms were measured using the Patient Health Questionnaire (PHQ-8) administered roughly every six months. Latent class trajectory analysis was conducted for group identification. A three-class trajectory model fit the data best. Class 1 had minimal or no depressive symptoms over time (38%). Class 2 (47%) had chronic mild symptoms, while Class 3 had persistent moderate/severe symptoms (15%). Occupational distress was significantly associated with trajectory class. The odds of being in either the persistent mild or the persistent moderate/severe depressive symptom class were significantly higher for those who were female, with fair/poor self-rated health, with more perceived financial or occupational stress, with lower levels of perceived emotional support, and with lower levels of spiritual well-being. The class exhibiting resilience to depressive symptoms had higher levels of perceived support and spiritual well-being as well as lower levels of perceived financial and occupational stress. A substantial percentage of clergy, and possibly people in similar helping occupations, may experience significant levels of depressive symptoms that do not remit over time. These persons may benefit from treatments that address work-related coping.

KEYWORDS
Depressive symptoms, trajectories, group-based trajectory modeling, epidemiology, occupational stress, clergy

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Introduction

Numerous studies have shown that higher levels of religious participation and spirituality are positively linked to good mental health, and that religious coping can buffer the effects of stress among those for whom religion is important [1-3]. Yet, clergy, as an occupational group, may experience higher rates of depression when compared to similar adults in the general population [4]. In a sample of clergy, the prevalence of depression was 8.7% [4], compared to 5.5% measured in a similar age group in the US population, with both studies using the Patient Health Questionnaire (PHQ-9) [5]. Higher prevalence was observed across both genders, with 8.8% of male clergy qualifying for depression compared to 4.4% in the general population and 8.2% of female clergy compared to 6.6% in the general population [4]. Clergy also may experience burnout [6], and experience high levels of occupational stress due in part to work demands [7, 8].

These higher rates of depression and stress may be due in part to high job strain including interpersonal stress resulting from conflicting priorities and responding to congregational expectations with regard to availability, character, and performance [8]. This strain may be confounded by low financial reward relative to the effort expended [4] and the difficulty of rapidly switching between diverse jobs including counselor, public speaker, mediator, and administrator [9].

Clergy are an excellent platform from which to explore the long-term course of depressive symptoms in a population with high levels of occupational distress. While there have been several large and scientifically rigorous studies of clergy work conditions and sources of support [10], much of the prior research has been based on small samples, poor response rates, and cross-sectional studies.

The analyses presented here take advantage of data collected through a large longitudinal study of United Methodist Church (UMC) clergy in North Carolina. Depression is a dynamic condition, and over time, depressive symptoms can be present or absent. Depressive symptoms can be problematic in several ways. Not only are they a burden to the people experiencing them, but they increase the risk of major depression. In addition, people with depressive symptoms are more likely to miss work and be less productive while at work [11]. Cross-sectional studies of depressive symptoms in populations with high levels of stress may reflect short-term states associated with specific recent events or changes in life circumstances. Trajectories of depressive symptoms can be informative in both describing the course of depressive symptoms over a longitudinal time period and identifying optimal points for interventions.

Distinct trajectories of depressive symptoms have been identified in both community and clinical samples of adults [12-17]. In a recent review of studies exploring long-term trajectories of depressive symptoms using group-based trajectory modeling [18], most studies identified heterogeneity in the course of depressive symptoms and identified either 3 or 4 distinct trajectory classes. These classes varied in terms of severity and stability over time. While overall most of the individuals included in these studies reviewed showed minimal depressive symptoms, a notable percentage (<10%) showed chronic depressive symptoms. To the best of our knowledge, group-based trajectories of depressive symptoms have not been identified in a non-clinical sample of adults with high levels of occupational distress and observed high rates of depressive symptoms.

The aims of these analyses were 1) to identify distinct trajectories of depressive symptoms in a sample of clergy, relatively homogeneous in their work tasks, based on their responses to a depression screening scale over a time period of up to 5 ½ years, and 2) to identify associations between membership in these distinct trajectory classes and demographic, health, and social variables known to be correlated with major depression and/or depressive symptoms. Studies have shown that major depression and depressive symptoms are more prevalent among women, younger and middle-aged adults, unmarried adults, and White compared to Hispanic and Black adults [19-21]. Major depression and depressive symptoms are associated with increased morbidity from chronic conditions [22]. Higher prevalence of major depression and generalized anxiety are associated with occupational stress [23]. Higher levels of depressive symptoms are associated with socioeconomic disadvantage and/or financial strain [24, 25]. Lower levels of perceived emotional support influence the course of major depression in adults [26, 27]. In the general population, greater religiousness is mildly associated with fewer depressive symptoms [28]. Among clergy, higher levels of spiritual well-being are associated in cross sectional studies with fewer depressive symptoms [29, 30].

We hypothesized, based on previous studies identifying trajectories in non-clinical samples [18], that we would identify multiple trajectories of depressive symptoms which differed in both their initial assessment and in their changes over time. We anticipated four trajectory classes: a class with few or no depressive symptoms over time, a class with persistent higher levels of depressive symptoms, a class with few or no depressive symptoms whose depressive symptoms increased over the study period, and a class with significant depressive symptoms whose scores decreased over time. We hypothesized that levels of occupational stress would be different across classes. In addition, demographic variables, levels of social support, and perceived health, as well as spiritual well-being, would be differentially distributed across trajectory classes. For example, a trajectory of persistent moderate or severe depressive symptoms would be associated with female sex, poorer health, higher levels of perceived financial and occupational stress, lower levels of social support, and lower levels of spiritual well-being.

Methods

Study Sample

The sample was 1172 participants enrolled in a randomized trial designed for United Methodist clergy based in North Carolina to test the effects of lifestyle interventions primarily on metabolic syndrome and secondarily on stress and depressive symptoms, although as previously reported, the intervention did not change depressive symptoms [31, 32]. All United Methodist clergy in the geographic region were invited to participate; they were not selected based on physical or mental health status. The trial ran from 2010-2016, and participants were interviewed at study enrollment and followed over time at roughly six month intervals for up to 66 months. As previously described [31, 32], there were three intervention cohorts in the trial. The interventions for each cohort were generally similar and ran for two years. Cohort 1 received the intervention January 2011-December 2012. Cohort 2 received the intervention January 2012-December 2013 and Cohort 3 from January 2013-December 2014. This analysis controlled for the timing of the intervention. Cohort participants were assessed at 12, 18, and 24 months during the intervention. Cohort 1 was followed for 18 months post-intervention, with 78% of the cohort still in the study at 42 months after the 2010 baseline. Cohort 3 was followed 12 months post-intervention, with 62% of the sample still in the survey at 66 months. Cohort 2 was not followed post-intervention. A total of 70% of Cohort 2 participated at 36 months after the 2010 baseline.

The survey research firm Westat conducted the online survey data collection of participants. All clergy provided informed consent to participate. The research protocols were reviewed initially and annually and approved by the Institutional Review Boards at both Duke University Arts and Sciences and Westat. To be included in these analyses, participants had to be appointed to a church either part-time or full-time at the time of study enrollment.

Measures

Depressive Symptoms --The self-report eight item version of the Patient Health Questionnaire (PHQ-8) [5, 20, 33] was used to assess depressive symptoms. The PHQ-8 asks about the frequency of specific depressive symptoms experienced during the previous two weeks and has a possible range of values from 0 to 24. A score of 0 to 4 represents no significant depressive symptoms, a score of 5 to 9 mild depressive symptoms, 10 to 14 moderate, 15 to 19 moderately severe, and 20 to 24 severe depressive symptoms. The PHQ-8 score was used as a continuous variable in these analyses.

Occupational Distress was measured using the 5-item Clergy Occupational Distress Index (CODI) [34] which assesses congregational demands by asking, in the past year, how often have people in the congregation made too many demands on you, been critical of you and the things you have done, have you experienced stress, and have you felt lonely or isolated in your work? The scale range was 0-15 with higher numbers indicating more distress. The CODI score was used as a continuous variable.

Perceived Emotional Support was measured using the eight emotional/informational support items from the Medical Outcomes Study – Social Support Survey (MOS-SSS) [35]. The scale range was 0 to 32, with higher levels indicating more support. Perceived emotional support was used as a continuous variable in these analyses.

Spiritual Well-Being was measured using the Clergy Spiritual Well-Being scale [30] which includes two components: Experiencing spiritual well-being in *daily life* and experiencing spiritual well-being in *ministry.* The possible scale range was 0 to 24 for each component, with higher scores indicating higher spiritual well-being. Spiritual well-being in the everyday and

spiritual well-being in ministry were used as continuous variables. The two components of spiritual well-being were known to be highly correlated [30], and were assessed in separate models.

Demographic Variables included age measured as a continuous variable, race category (White, Black, Other), sex, and marital status (married vs. not married).

Other Personal Characteristics included self-rated physical health (fair/poor vs. excellent/very good/good) and self-rated financial stress (extremely, very, or moderately stressful vs. slightly or not at all stressful). Cohort assignment was controlled in these analyses based on when the participant actually received the intervention.

Statistical Analyses

All analyses were conducted using SAS Version 9.3 (2011). Latent class trajectory analysis was conducted using PROC TRAJ [36], which estimates group-based semiparametric mixture models. Two sets of models were estimated, using 1-4 classes each. Cubic and quadratic terms were included for each class and removed if not significant. The first set of models estimated the trajectories using the PHQ-8 score alone. The second set of models included the two following time-varying covariates. We controlled for intervention (Y/N) at each assessment point to capture whether the participant was currently in the intervention phase. We added a second covariate to the models to indicate whether the participant had recently changed churches, as relocation has been associated with decreased mental distress for pastors [37]. The Bayesian Information Criteria (BIC) statistic was used to compare models with an additional class to those with fewer classes. In addition, class size was assessed to be sure there were sufficient participants in each class for meaningful comparisons. We estimated the latent classes with the PHQ-8 scores assuming a Poisson distribution.

Participants were assigned to the class with the highest posterior probability of membership. Classes were then compared across demographic and health variables, occupational stress, perceived emotional support, and spiritual well-being using chi-square or F statistics. As a final step, we estimated multinomial logistic regression models to examine the probability of class membership across the covariates of interest.

Results

As shown in Table 1, the sample at baseline was on average middle-aged, predominantly male, white, and married. Most of the participants reported they were in good to excellent health. Slightly less than half of the sample reported their financial situation was extremely/very/moderately stressful. Occupational distress scores were slightly higher than those reported from a representative sample of all clergy in the United States [34]. Most of the sample reported strong perceived emotional support and high levels of spiritual well-being, both in daily life and in ministry. The mean PHQ-8 score at baseline was 4.3. The median score was 3.0 (IQR=1 to 6). A total of 11.5% of the sample had a PHQ-8 score of 10 or greater at the start of the study, a score which can be considered current depression [20]. A total of 6829 observations from 1172 participants were available for the longitudinal analyses. The mean (standard deviation) number of observations per participant was 5.8 (2.7).

A three-class trajectory model fit the data best. The Poisson models with and without the two time-varying covariates were highly correlated, so we used the model that controlled for

the intervention period and changing churches. The trajectories are shown in Figure 1. Three distinct classes were identified in the data. Class 1 had minimal or no depressive symptoms over time (38%). Class 2 had mild depressive symptoms over time (47%), while Class 3 had moderate to severe symptoms over time (15%). The mean posterior probabilities showed good class separation. The mean membership probability for Class 1 was 0.95 (Range 0.54 to 1.00). The mean probability for Class 2 was 0.94 (Range 0.51 to 1.00), while the mean for Class 3 was 0.95 (Range 0.53 to 1.00).

As shown in Figure 1, the PHQ-8 scores tended to be consistent over time for each class. Two of the three classes (62% of the sample) had on average at least persistent mild depressive symptoms over time. The classes differed on several characteristics as shown in Table 1. The class with minimal or no depressive symptoms was on average slightly older, more likely to be male, be in better (self-rated) physical health, report less perceived financial stress and occupational distress, have higher levels of perceived emotional support and have higher levels of spiritual well-being compared to the two classes with higher levels of depressive symptoms over time. The associations followed a fairly consistent pattern across the three classes from persistent minimal/no depressive symptoms to persistent moderate or severe symptoms. For example, the persistent minimal/no depressive symptom class had lower occupational distress scores (mean=5.4), whereas the occupational distress scores were higher for the mild symptom class (mean=6.8) and higher still for the persistent moderate/severe class (mean=8.7). Clear increasing or decreasing patterns by depressive symptom class were observed for all variables except for two. The proportion of women was higher in the class with mild depressive symptoms compared to the proportion in the class with minimal/no symptoms. The proportion of women was lower in the moderate/severe class compared to the mild symptom class but higher compared to the minimal/no symptom class. Also, the proportion of married participants was lower in the class with persistent mild depressive symptoms and higher in the class with moderate/severe depressive symptoms.

The results of the multinomial logistic regression model including the variable spiritual well-being in the everyday are shown in Table 2. In this model, trajectory class is the dependent variable, with the reference group being the class with minimal/no depressive symptoms. That is, the odds of class membership in the group with persistent mild symptoms are compared to the odds of being in the minimal/no symptom class. Within the same model, the odds of being in the persistent moderate/severe symptom class are also compared to the odds of being in the minimal/no symptom class.

Variables that were significant across classes in the bivariate analyses remained significant in the controlled analyses across classes and in the directions expected, except for age which was no longer significantly different across classes. These findings suggest the effect of age observed in the uncontrolled analyses (Table 1) is primarily indirect through other variables in the model. As hypothesized, the effect of occupational stress differed across classes. The odds of being in either the persistent mild or the persistent moderate/severe depressive symptom class, compared to the persistent minimal/no symptom class, were significantly higher for those who were female, had fair/poor self-rated health, reported more financial stress, reported higher levels of occupational distress, had lower levels of perceived emotional support, and had lower levels of spiritual well-being in the everyday. The effect of marital status on class membership did not differ between the persistent mild depressive symptom class and the

minimal/no depressive symptom class. Those who were married had an increased probability of being in the persistent moderate/severe class compared to the minimal/no depressive symptom class. Only ten participants in the moderate/severe depressive symptom class were not married so that these findings must be interpreted with caution.

As shown in Table 3, the same patterns across the classes were observed in the multinomial model including spiritual well-being in ministry as those in the model controlling for spiritual well-being in the everyday.

Discussion

We present several new findings from this research. A majority of the sample experienced a clinically meaningful level of persistent depressive symptoms or symptoms above the no/minimal level, and 15% experienced on average persistent symptoms that were in the moderate to severe range. While some clergy likely experienced changes from one year to the next, the groups as a whole did not experience much change over the longer 5-year study period. While these analyses identified variables associated with persistent mild to moderate/severe depressive symptoms including female sex, poorer self-rated health, higher levels of reported financial and occupational stress, lower levels of perceived emotional support, and lower levels of spiritual well-being, these findings also offer insights into a group within this same occupation who exhibited resilience against depression. Within this resilient group, higher levels of perceived emotional support and spiritual well-being were protective against depressive symptoms as were lower levels of perceived financial and occupational stress, although temporal ordering was not established.

While we identified distinct groups of clergy based on their PHQ-8 scores over time, the data did not support all of our hypotheses. The data supported our hypothesis that there would be a group of clergy with persistent no/minimal symptoms and a group with persistent higher levels of depressive symptoms, although the proportion in the group with more symptoms was higher than the less than 10 percent generally observed across studies [18]. One explanation for this higher proportion in the moderate to severe group as well as higher levels of persistent mild symptoms is the nature of the occupation itself. Another possible explanation for this higher proportion is that people who are predisposed to depression may self-select into ministry. For example, troubled young adults who find healing in the church may be more likely to spend time at church and later be encouraged to enter ministry.

The data did not support our hypothesis that there would be a group of clergy that saw a significant increase in depressive symptoms over the study period. Also, while the model coefficients showed that all groups showed a slight decrease over time, there was not a group that saw a significant decrease in scores over time. That is, the patterns observed in non-clinical samples of increasing and decreasing levels of symptoms [18] differed from the stability or persistent levels of symptoms observed in our study. It is not immediately clear why we did not observe increasing and decreasing patterns. Clergy experience this low level of stress from their occupational responsibilities over time that does not significantly change which may support a persistent pattern. For example, they may periodically change churches, but they keep the same jobs. Clergy probably also have fairly consistent support systems in place which can potentially protect against milder symptoms becoming more severe.

It is possible there are sampling reasons that explain why we did not observe patterns as hypothesized and observed in similar samples. Our sample was predominantly male, whereas community samples generally have higher proportions of women than men. Our sample was also more likely to be married and marital status differed by gender. Almost all of the men in our sample were married (96%), whereas 74% of the female clergy were married. Research has shown that it is the quality of the marriage rather than the marriage itself that links marriage to positive mental health [38]. It is possible the nature of the occupation or the depressive symptoms themselves may introduce marital strain in this population. The relationship between marital status and depressive symptoms will be the focus of additional work.

Our sample was drawn from a group of clergy participating in a randomized clinical trial to improve physical and, secondarily, mental health. However, the intervention did not have a direct effect on depression outcomes [32], and so the intervention is less likely to have affected our trajectories. Finally, our trajectories were essentially linear with only small improvements over time. We did not observe an optimal point for intervention, suggesting interventions at any point could potentially change the course of depressive symptoms in this population.

Do these findings provide data that can help identify potential interventions? Congregations can help their clergy in physical and mental health promotion. Encouraging days off and reducing occupational distress through fewer congregational demands and criticisms could potentially lead to better mental health in this at-risk population. Encouraging exercise and healthy eating could help not only physical but mental health as well. Clergy have high rates of physical health risk factors and chronic disease [39].

Clinicians treating clergy should be aware of several points about this population. First, clergy report being reluctant to seek professional mental health care due to concerns about perceptions from both their congregants and clergy supervisors that they may be unfit to lead their congregations [40]. Second, clergy are on call for a variety of situations, work irregular hours, and often deal with difficult interpersonal situations, similar to other helping professionals. A substantial percentage of clergy in our sample, and possibly people in other similar helping occupations, may experience significant levels of depressive symptoms that do not remit over time. These individuals may benefit from treatments that address work-related coping. Such coping strategies may include helping clergy recognize the importance of engaging in practices that promote health and well-being, helping clergy set boundaries between their work and personal/family life which may in turn reduce marital strain, and encouraging self-acceptance even when work is difficult [41]. A qualitative study found that clergy with positive mental health reminded themselves that the process of working with congregants is more important than immediate results [41]; this focus on process may be a helpful coping strategy for people in other helping occupations as well.

This research has several limitations. Depressive symptoms were measured using the self-report PHQ-8 and not confirmed through a psychiatric interview, although the use of self-administered measures is standard practice. Depression assessments were obtained every 6-12 months and we recognize symptoms and PHQ-8 scores may change in the interim. Our analyses described relationships between self-rated health, perceived financial stress, perceived emotional support, and spiritual well-being at baseline and trajectory class. We did not measure change in these variables over the study period and that could affect the trajectories. Future research will describe the conjoint associations among some of these variables and PHQ-

8 scores over time. In this study, we utilized data collected for the primary purpose of evaluating a holistic health intervention. To adjust for this effect, we controlled for the timing of the interventions in our models. The trajectories, however, were essentially unchanged from those without that control, suggesting the interventions did not have a significant effect on the latent trajectories, which have the additional benefit of accounting for unmeasured variables. Finally, as with any longitudinal study, we experienced attrition.

This study had many strengths, perhaps most notably its longitudinal data collected mostly at six-month intervals for up to five and a half years that allowed us to examine PHQ-8 scores over multiple time points. Our sample included clergy across all age groups, and offered a sample that had a large proportion of men to describe trajectories in a predominantly male population. Because the clergy in our sample were essentially homogenous in terms of education, income, and occupation, we were able to focus on associations unique to this occupational group, including spiritual well-being and occupational distress.

These findings have clinical implications beyond this profession to those in similar helping occupations. For example, in one study comparing clergy burnout with that in other helping professions, burnout scores were relatively better among clergy than among police and emergency personnel, similar to those among teachers and social workers, and higher than those of counselors [42]. That is, clergy are like other helping professionals in that they are essentially on call with limited control over the hours that they work and, even though they sometimes handle acute and serious issues, they more frequently encounter numerous and constant small hassles. Those in helping professionals, including clergy, self-select generally into their vocation and tend to stay in it for many years. It would be interesting to know whether the persistent depressive symptom classes found in this sample of clergy would also be observed in other helping professional groups, or whether other groups would see increases and/or decreases over time.

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Figure 1. Mean PHQ-8 Depression Scores Over Time by Trajectory Class (n=1172)

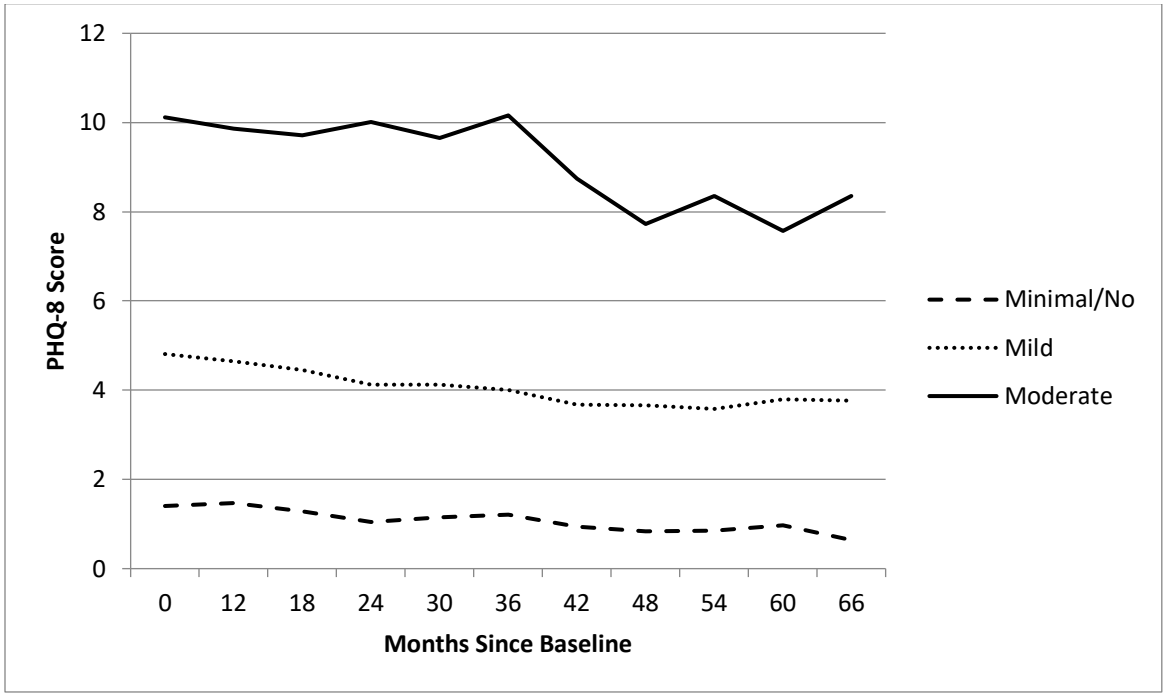

Table 1. Characteristics of the sample at baseline by trajectory class (n=1172)

	Mean (SD)/n (%)				
	Total Sample (n=1172)	Persistent Minimal/No Depression (n=449)	Persistent Mild Depression (n=550)	Persistent Moderate or Severe Depression (n=173)	Significance
Mean Age (sd)	51.5 (10.4)	52.6 (10.5)	51.0 (10.2)	50.1 (10.4)	F[2,1169]=4.7, p=0.0096
No. Female (%)	381 (33%)	123 (27%)	202 (37%)	56 (32%)	X^2[2]=9.8, p=0.0074
No. White (%)	1044 (89%)	388 (86%)	499 (91%)	157 (91%)	X^2[4]=7.2, p=0.1242
No. Black (%)	70 (6%)	35 (8%)	29 (5%)	6 (3%)	
No. Other (%)	58 (5%)	26 (6%)	22 (4%)	10 (6%)	
No. Married (%)	1043 (89%)	402 (90%)	478 (87%)	163 (94%)	X^2[2]=7.4, p=0.0248
No. Cohort 1 (%)	361 (31%)	142 (32%)	159 (29%)	60 (35%)	X^2[4]=2.8, p=0.5947
No. Cohort 2 (%)	348 (30%)	130 (29%)	166 (30%)	52 (30%)	
No. Cohort 3 (%)	463 (39%)	177 (39%)	225 (41%)	61 (35%)	
No. Fair/Poor Self-Rated Health (%)	173 (15%)	31 (7%)	89 (16%)	53 (31%)	X^2[2]=57.6, p<.0001
No. Financial Situation Extremely/Very/Moderately Stressful (%)	529 (45%)	133 (30%)	281 (51%)	115 (66%)	X^2[2]=83.3, p<.0001
Mean Occupational Distress (sd)	6.5 (3.0)	5.4 (2.5)	6.8 (2.9)	8.7 (3.1)	F[2,1169]=88.9, p<.0001
Mean Perceived Emotional Support (sd)	24.1 (6.1)	25.8 (5.1)	23.7 (6.0)	20.8 (7.5)	F[2,1169]=46.2, p<.0001
Mean Spiritual Well-Being Everyday (sd)	15.4 (4.8)	17.0 (4.4)	15.0 (4.5)	12.7 (5.0)	F[2,1169]=62.4, p<.0001
Mean Spiritual Well-Being Ministry (sd)	16.2 (4.6)	17.5 (4.5)	15.7 (4.4)	14.4 (4.8)	F[2,1169]=37.0, p<.0001
Mean PHQ8 Score (sd)	4.3 (4.1)	1.4 (1.5)	4.8 (3.1)	10.1 (4.8)	F[2,1169]=548.4, p<.0001

PHQ-8 indicates the 8-item, self-report version of the Patient Health Questionnaire.

Table 2. Results of the multinomial logistic regression model showing the associations between selected variables, including spiritual well-being in the everyday, and trajectory class with the class with minimal/no depressive symptoms as the reference group (n=1172)

	Persistent Mild Depressive Symptoms (47%)			Persistent Moderate or Severe Depressive Symptoms (15%)				
	Est	Std Err	OR (95% CI)	Est	Std Err	OR (95%)	Wald chi-square [2 df]	p-value
Intercept	1.01	0.64		-1.27	0.96			
Age	-0.01	0.01	1.00 (0.98, 1.01)	-0.01	0.01	1.00 (0.98, 1.02)	0.4	P=0.7993
Female	0.48	0.16	1.62 (1.18, 2.22)	0.63	0.24	1.88 (1.18, 2.99)	10.8	P=0.0044
Black	-0.07	0.21	0.67 (0.39, 1.17)	-0.30	0.37	0.53 (0.19, 1.45)	*5.4	P=0.2498
Other	-0.26	0.23	0.56 (0.29, 1.06)	-0.04	0.35	0.68 (0.27, 1.70)		
Married	-0.01	0.23	1.00 (0.63, 1.58)	1.25	0.43	3.50 (1.52, 8.07)	10.7	P=0.0046
Cohort 1	-0.17	0.10	0.77 (0.56, 1.07)	-0.08	0.15	0.94 (0.58, 1.52)	*3.3	P=0.5077
Cohort 2	0.08	0.10	0.99 (0.71, 1.37)	0.10	0.15	1.12 (0.68, 1.85)		
Fair/Poor Self-Rated Health	0.77	0.23	2.15 (1.36, 3.39)	1.33	0.28	3.77 (2.16, 6.58)	21.8	P<.0001
Financial Situation Stressful	0.64	0.15	1.89 (1.42, 2.51)	0.88	0.22	2.42 (1.57, 3.72)	24.2	P<.0001
Occupational Distress	0.14	0.03	1.15 (1.09, 1.21)	0.33	0.04	1.38 (1.29, 1.49)	75.1	P<.0001
Perceived Emotional Support	-0.04	0.01	0.96 (0.94, 0.99)	-0.08	0.02	0.92 (0.89, 0.95)	22.3	P<.0001
Spiritual Well-Being - Everyday	-0.07	0.02	0.93 (0.90, 0.96)	-0.14	0.02	0.87 (0.83, 0.91)	36.6	p>.0001

* Indicates 4 degrees of freedom for the Wald-Chi Square comparing the overall association between the covariate of interest and trajectory class across the three classes; OR=Odds Ratio; CI=Confidence Interval; df=degrees of freedom

Reference group is those in trajectory class with minimal/no depressive symptoms (38% of the total sample);

Table 3. Results of the multinomial logistic regression model showing the associations between selected variables, including spiritual well-being in ministry, and trajectory class with the class with minimal/no depressive symptoms as the reference group (n=1172)

	Persistent Mild Depressive Symptoms (47%)			Persistent Moderate or Severe Depressive Symptoms (15%)				
	Est	Std Err	OR (95% CI)	Est	Std Err	OR (95%)	Wald chi-square [2 df]	p-value
Intercept	1.06	0.65		-1.53	0.97			
Age	-0.01	0.01	1.00 (0.98, 1.01)	-0.01	0.01	1.00 (0.97, 1.02)	0.5	P=0.7969
Female	0.44	0.16	1.56 (1.14, 2.13)	0.54	0.23	1.72 (1.09, 2.72)	8.9	P=0.0119
Black	-0.07	0.21	0.66 (0.38, 1.15)	-0.36	0.37	0.45 (0.17, 1.24)	*6.6	P=0.1581
Other	-0.28	0.23	0.59 (0.28, 1.02)	-0.08	0.34	0.59 (0.24, 1.47)		
Married	-0.03	0.24	0.97 (0.61, 1.54)	1.20	0.42	3.33 (1.46, 7.60)	10.4	P=0.0054
Cohort 1	-0.18	0.10	0.75 (0.54, 1.03)	-0.09	0.15	0.90 (0.55, 1.45)	*3.6	P=0.4684
Cohort 2	0.06	0.10	0.95 (0.69, 1.32)	0.07	0.15	1.06 (0.64, 1.74)		
Fair/Poor Self-Rated Health	0.78	0.23	2.19 (1.39, 3.45)	1.40	0.28	4.06 (2.35, 7.04)	25.0	P<.0001
Financial Situation Stressful	0.67	0.15	1.96 (1.47, 2.60)	0.94	0.22	2.57 (1.67, 3.94)	27.5	P<.0001
Occupational Distress	0.13	0.03	1.14 (1.08, 1.20)	0.32	0.04	1.38 (1.28, 1.49)	75.6	P<.0001
Perceived Emotional Support	-0.04	0.01	0.96 (0.93, 0.98)	-0.10	0.02	0.91 (0.88, 0.94)	30.9	P<.0001
Spiritual Well-Being Ministry	-0.06	0.02	0.94 (0.91, 0.97)	-0.09	0.02	0.91 (0.87, 0.96)	20.4	P<.0001

* Indicates 4 degrees of freedom for the Wald-Chi Square comparing the overall association between the covariate of interest and trajectory class across the three classes; OR=Odds Ratio; CI=Confidence Interval; df=degrees of freedom

Reference group is those in trajectory class with minimal/no depressive symptoms (38% of total symptoms)