# Finding Meaning in Crisis: Gender, Spiritual Practice, and Trauma Symptomology Impact Posttraumatic Growth in COVID-19 Ghana

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The present study explores mechanisms that may facilitate strengths-based adaptive outcomes following exposure to traumatic events such as the COVID-19 pandemic in Ghana. We investigated the interactive relationships of spirituality with meaning-making concerning trauma symptomology and PTG. Data was collected in person and via surveys during the COVID-19 pandemic from four diverse locations in Ghana. Participants ($N$ = 232) were age 18+. We investigated trauma and PTG in the context of theistic, ritualistic, and existential spirituality, search for meaning, and presence of meaning. Results indicate that spirituality, search for meaning, and trauma symptoms predict PTG. Both trauma symptomology and PTG were higher for women. Additionally, marriage and education were protective factors for women. Strategies that encourage meaning-making through spiritual-based programming may enhance the effectiveness of culturally centered approaches for encouraging PTG and resilience associated with adverse events. This study contributes theoretical, methodological, and cultural knowledge to clinical practice and research, highlighting a traditional Ghanian cultural perspective that can be applied to other sub-Saharan African countries.

*Keywords:* posttraumatic growth, trauma, meaning-making, spirituality, Ghana, COVID-19

Religious affiliation and spiritual practice hold significant importance across many sub-Saharan African countries, playing a central role in shaping the cultural, social, and personal lives of individuals and communities (Abadio et al., 2023; Adu-Gyamfi, 2020; Frimpong, 2022). Ghana is characterized by a rich diversity of religious beliefs and practices. Christianity is the dominant religion in Ghana, followed by Islam and indigenous African belief systems. Further, Christianity, Islam, and various faiths coexist, often blending elements of different traditions and using religion as the lens through which individuals and communities ascribe meaning to life events (Knizek et al., 2021; Peprah et al., 2018). With most Ghanaians strongly adhering to spiritual belief systems, religion influences Ghana's entire cultural and social fabric, including mental and physical well-being (Adinkrah, 2011). To Ghanaians, spirituality is perhaps the pivotal point of human existence (Mate-Kole, 2013), and traditional Ghanaian medical theories view disease in the context of spiritual and social causation (Gyasi, 2016; Opoku et al., 2018). We cannot overlook dimensions of spirituality when considering mental health in Ghana, as most Ghanaians report that you cannot separate healing and spirituality as

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they are part of the same concept (Opoku et al., 2018). Therefore, the multifaceted cultural importance of religion and spirituality should be incorporated when considering psychological health in Ghana.

Recent studies indicate that Ghanaians have resiliently infused cultural practices associated with religion and spirituality to improve quality of life across several domains, including women with breast cancer (Ofei et al., 2023), housing insecure youth (Asante, 2021), and smallholder farmers experiencing climate change (Mohammed et al., 2021). Religious and spiritual practice may be a crucial and accessible pathway for fostering collective and personal posttraumatic growth (PTG) in Ghana. Further, as global crises such as pandemics and climate change increase, especially in the Global South, safeguarding socially and culturally influenced resilience factors and coping mechanisms is critical. Recent literature calls for examining religious beliefs and spirituality in the study of meaning-making and suffering (Hall & Hill, 2019). Therefore, this study investigates the interactive relationships of spirituality with meaning-making concerning trauma symptomology and posttraumatic growth (PTG) in four diverse geographical regions of Ghana during the COVID-19 pandemic.

**COVID-19 in Ghana**

Ghana has an extensive history of collective and personal trauma, including poverty, colonialism, slavery, non-communicable and communicable diseases, and adverse effects of climate change, political unrest, and high rates of interpersonal violence. The COVID-19 pandemic compounded many of these longstanding issues, especially in the more remote northern regions. Ghana's response to the COVID-19 pandemic garnered international attention due to systematic tracking methods, fast response times for border closures, and immediate limitations on public gatherings (Osei-Kojo et al., 2020). Nonetheless, Ghana suffered significant social and economic disruption due to insufficient resources. Small and medium-sized business owners and smallholder farmers, integral contributors to the Ghanaian economy, reported increased psychological distress during the pandemic (Asante et al., 2021; Uziret et al., 2021). Further, Ghana experienced increased food and water insecurity during the pandemic (World Economic Forum, 2020) and significant disruption to subsistence farming, migrant remittances, and extractivist and tourism industries (World Food Programme, 2020). The COVID-19 pandemic also negatively impacted maternal health-seeking behaviors (Asuming et al., 2022), malaria prevention and treatment services (Cheng et al., 2022), and caused widespread disruptions to already fragile healthcare systems (Narain et al., 2022). While individual and community psychological impacts of the pandemic have been less examined in Ghana, studies indicate that while the economic downturn in Ghana had largely corrected as restrictions eased, adverse mental health implications persisted (Durizzo et al. 2022). Additionally, loss of employment during the pandemic was significantly associated with increased rates of depression in Ghana (Adu et al., 2021; Uzir et al., 2021). Globally, the psychological impact of COVID-19 has universally included increases in stress, depression, anxiety, and posttraumatic stress disorder (PTSD; Chamaa et al., 2021; Kanzler & Ogbeide, 2020; Serafini et al., 2020).

## PTSD and Trauma

The *World Health Organization International Classification of Disease* (*ICD-11*) reports that PTSD results when individuals who are exposed to "an extremely threatening or horrific event or series of events" experience difficulty across three symptom clusters: intrusion, avoidance, and hyperarousal (World Health Organization, 2019). Recent findings have supported the *ICD-11* classification of PTSD in Ghanaian adults as well as other sub-Saharan African countries (Charak et al., 2022). The current prevalence rate of PTSD in Ghana is believed to be 18.6%, with physical assault and motor vehicle accidents the most frequently reported traumatic life events (Ben-Ezra et al., 2020). For Ghanaian women, the highest rates of PTSD are associated with sexual violence (Apatinga et al., 2020), which increased during the COVID-19 pandemic (UN Women, 2020). Historically, sub-Saharan Africa has experienced widespread outbreaks of disease and violence, which are predicted to continue (Witmer et al., 2017). Combined with increases in adverse climate effects, understanding culturally relevant risk and protective factors for PTSD is crucial to developing effective prevention and intervention strategies and advocating for evidence-based policymaking.

## Posttraumatic Growth

PTG describes an individual's ability to experience positive psychological changes and personal growth following exposure to challenging life circumstances or traumatic events (Tedeschi et al., 2018). Proposed mechanisms indicate that PTG can be measured as a renewed appreciation for life, a stronger sense of relating to others, personal strength such as increased confidence, optimism, or seeing new possibilities for the future, and having a deeper appreciation for life's meaning and purpose (Tedeschi & Calhoun, 1996). PTG can also result from an individual's attempts to cope with trauma and may be a form of adaptive functioning (Tedeschi & Calhoun, 1995; Zoellner & Maercker, 2006) and has been associated with recovery from traumatic experiences (Parry et al., 2023). In Ghana, PTG studies have found significant positive growth or changes in the lives of survivors of traumatic events. For example, survivors of COVID-19 have been found to experience significant PTG following recovery, with women experiencing more PTG (Adjorlolo et al., 2022). Also, perceived social support, religiosity, hope, and optimism have been found to be positively associated with PTG in breast cancer survivors in Ghana, while PTG and religiosity were positively correlated with health-related quality of life (Ofei et al., 2023).

## Meaning-making

Meaning-making is broadly considered an existential process that describes finding or searching for comprehension, purpose, and significance in life (King & Hicks, 2021). Amidst trauma, meaning-making through realistically incorporating trauma into one's belief system can facilitate recovery (Park, 2010). While searching for meaning in life has been associated with higher levels of psychological distress (Diasbato et al., 2021; Steger et al., 2021), it can also foster psychological growth (Park, 2010) and has been associated with decreased rates of depression (Braam & Koenig, 2019). Research also indicates that finding greater life meaning may contribute to decreased trauma-related distress (Ostafin & Proulx, 2020).

Meaning-making can be found in cultural and religious traditions (Masten & Wright, 2010) and spiritual practices (Lysne & Wachholtz, 2011). In many African countries, religion

forms a global meaning system that influences all aspects of being. Spirituality can foster meaning-making (Mattis, 2003; Vis & Boynton, 2008) and resilience through an individual's interactions with their social ecologies (Masten & Wright, 2010). Further, religious beliefs and practices are predictors of PTG (Prati & Pietrantoni, 2009) and have been associated with positive effects on mental and physical well-being across cultures (Braam & Koenig, 2019; Cohen & Koenig, 2003; Unterrainer & Fink, 2014).

**Religion and Spirituality**

Religion is often defined as a cultural concept (Paloutzian & Clark, 2021) referring to interaction with religious institutions or traditions, while spirituality is generally regarded as a personal and experiential relationship with the transcendent (Del Rio & White, 2012; Worthington & Sandage, 2001). Multidimensionally, spirituality can be conceptualized as three distinct but interacting phenomena: ritualistic, theistic, and existential spirituality (Webb et al., 2014). Ghanaians place high importance on religious affiliation and spirituality (Tabong & Adongo, 2013; Wilkinson & Callister, 2010). In 2005 and 2012, Ghana ranked first on the global religiosity index, with as high as 96% of Ghanaians describing themselves as religious (WIN-Gallup International, 2012). The Akan, the largest ethnic group in Ghana, do not divide human experiences into separate spiritual and material worlds but regard it as one inspirited universe (Minkus, 1980). A commonly held belief across these religions and indigenous spiritual practices is that supernatural forces greatly influence the human experience, thereby directing attributions of misfortune, help-seeking behavior, and belief in spiritual or supernatural intervention (Asamoah-Gyadu, 2011; Dzokoto, 2020; Salifu Yendork et al., 2019).

Studies indicate that spiritual themes and rituals are significant sources of resilience for Ghanaian women who have experienced trauma, reporting intrinsic and extrinsic religious engagement as part of meaning-making, finding purpose, and facilitating survival on their path to trauma recovery (Korang-Okrah, 2017). Spirituality in Ghana has also been linked to improved well-being in parents of special needs children (Dey et al., 2021), women entrepreneurs (Reid et al., 2015), and individuals undergoing medical procedures (Aziato et al., 2020). This echoes similar findings across countries, indicating that religion and spirituality are essential components of meaning-making and overall well-being in many cultures (Park, 2007; Unterrainer et al., 2010). Additionally, human suffering is often historically conceptualized as a positive transformative experience (Tedeschi et al., 2007; Tedeschi & Calhoun, 2004), which has been reflected across religious texts where suffering has resulted in transformation. Therefore, an examination of spiritual practice in the context of PTG is appropriate to any investigation of trauma in Ghana.

**The Present Study**

The present study explores mechanisms that may facilitate strengths-based adaptive outcomes following exposure to traumatic events such as the COVID-19 pandemic in Ghana. We investigated the interactive relationships of spirituality with meaning-making concerning trauma symptomology and PTG. Objectives of the current study include an evaluation of a) relationships between trauma symptomology, meaning-making, and PTG during the COVID-19 pandemic in Ghana, b) if and how spirituality is associated with trauma symptomology and

PTG, c) if spirituality, meaning-making, and trauma symptomology influence PTG; and d) if gender influences the association or strength of these relationships. Additionally, differences across demographic variables, such as level of education, marital status, and geographical location, are examined.

## Method

### Participants

Participants ($N$ = 237) were from Tamale ($n$ = 60), Mpatoum ($n$ = 33), Kumasi ($n$ = 68), and the Dangme West District ($n$ = 76), aged 18 to 85 years ($M$ = 35.90, $SD$ = 13.20), women (54.43%), men (45.57%), and married (52.3%), single (40.1%), divorced (3.4%), separated (2.5%), or widowed (1.7%). Religious affiliation was Christianity (60.9%), Islam (37.1%), and indigenous spiritual practice (2.0%). Level of education was noted as any schooling below high school level (4.2%), high school diploma (8.9%), some college (6.8%), four-year college degree (67.9%), and 10% had earned a graduate degree. However, the level of education varied widely across regions: Kumasi ($M$ = 18.16, $SD$ = 3.20), Tamale ($M$ = 9.25, $SD$ = 5.48), Mpatoum ($M$ = 7.94, $SD$ = 4.24), and Dangme West District ($M$ = 10.34, $SD$ = 3.66), and was highest in Kumasi.

### Measures

#### *Trauma Symptomology*

The Impact of Events Scale-Revised (IES-R; Weiss et al., 2007) is a 22-item self-report questionnaire used to assess the severity of symptoms related to a specified traumatic event. Questions addressed three clusters of trauma symptomology: intrusion, avoidance, and hyperarousal. Participants were asked to report how distressing each listed difficulty had been for them in the prior week with respect to the COVID-19 pandemic. An example statement is, "I had trouble staying asleep." Responses were reported on a 4-point scale (0 = *not at all* to 4 = *extremely*) and summed for a total possible score of 88. Higher scores indicate higher levels of symptom severity. Studies indicate acceptable validity of the IES-R in non-Western populations (Asukai et al., 2002; Creamer et al., 2002) to assess trauma during the COVID-19 pandemic, including cross-culturally, and specifically in Africa (Olapegba et al., 2020; Yakuba et al., 2021). For the present study, internal consistency was strong, α = .94 (whole scale), α = .86 (intrusion subscale), α = .84 (avoidance subscale), and α = .83 (hyperarousal subscale).

#### *Posttraumatic Growth*

Posttraumatic growth was measured using the Posttraumatic Growth Inventory- Short Form (PTGI-SF; Cann et al., 2010), a 10-item self-report assessment with two questions each across five domains, including relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. An example question is, "I established a new path for my life." Items are rated on a 5-point scale (0 = *I did not experience this change as a result of my crisis* to 5 = *I experienced this change to a very great degree as a result of my crisis*). Scores were summed, with higher scores indicating higher levels of PTG. Internal consistency for the PTGI-SF was reported as Cronbach's α = .90 at initial development with a U.S. sample (Cann et al., 2010). Adequate reliability and validity have also been reported cross-culturally (García &

Wlodarczyk, 2016) and in the context of COVID-19 (Gómez-Acosta et al., 2023). Internal consistency in the present study was α = .85.

### *Meaning in Life*

The Meaning in Life Questionnaire (MLQ; Steger et al., 2006), a 10-item self-report measure with two subscales of five items each, was used to assess presence of meaning in life and search for meaning in life (Steger et al., 2006). Participants were asked to indicate how much they agreed with each statement on a 7-point scale (1 = *absolutely untrue* to 7 = *absolutely true*). An example statement is, "I understand my life's meaning." Scores were summed for each subscale, with possible scores ranging from 5 to 35, with higher scores indicating a greater presence of each construct. Support for the reliability and validity of the MLQ across cultures has indicated Cronbach's α's of .78-.892 (Cameron et al., 2022; Dogra et al., 2008;2010;2011; Steger et al., 2006; Toussaint et al., 2022) with Cronbach's α = .75 in Ghana (Aglozo et al., 2019), and for the present study, search for meaning (α = .73) and presence of meaning (α = .54). However, analysis indicated that when item 9, "my life has no purpose," was removed, internal consistency for presence of meaning increased to α = .71. Item 9 is a reversed scored item. Research indicates that reverse-scored items are often ineffective in cross-cultural contexts (Suárez Álvarez et al., 2018).

### *Spirituality*

Multidimensional spirituality was assessed using the Ritualistic, Theistic, and Existential (RiTE) measure of spirituality (Webb et al., 2014). The RiTE is a 30-item questionnaire with ten items each for ritualistic, theistic, and existential spirituality. An example question is, "I feel belief in a deity or deities is very important." Responses are registered on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*) and summed to indicate a total score for overall spirituality or calculated separately for each type of spirituality. Adequate construct validity has been reported across studies (Chang et al., 2015; Webb et al., 2014). In the present study, Cronbach's α = .94 for the total scale, Ritualistic (α = .83), Theistic (α = .93), and Existential (α = .91). Unidimensional reliability analysis indicated that, for the present study, dropping item 4, "I feel faith-related rituals and/or practices are very important," on the Ritualistic subscale would increase alpha to .90.

## Procedure

Data were collected across four geographical areas of Ghana, including Tamale, Mpatoum, Kumasi, and the Dangme West District. Ghana is situated in West Africa with a population of approximately 31 million (World Bank, 2022), unevenly distributed over sixteen distinct regions (Osei-Kojo, 2020). Ghana has a rich cultural heritage, with over 100 ethnic groups, including the Akan. It also has a relatively robust democratic framework, including active media presence, freedom of expression, and enforceable legal structures. Ghana's life expectancy rate is about 64 years, which is higher than countries of similar demographics (World Bank, 2021).

Data collection occurred in August 2021, 17 months into the COVID-19 pandemic. Recruitment strategies included working with members of the chief's council and other local community leaders in each region and recruiting participants via word of mouth. Volunteer

translators were utilized where necessary. The inclusion criteria were that all participants must be aged 18+. Participants were compensated with small personal hygiene and stationery items valued less than USD 5. Surveys were administered both orally and via paper and pencil.

### Ethical Considerations

Institutional ethics approval was obtained, and participants were provided informed consent.

### Data Analyses

Descriptive statistics for the full study (see Table 1) and according to geographical location (see Table 2), correlations, and statistical analyses were conducted in SPSS v.29 (IBM Corp, 2022) and JASP vs. 0.17.1 (JASP Team, 2023). The appropriate assumptions of all statistical analyses were met.

**Table 1**

*Descriptive Statistics for Trauma, PTG, Meaning-Making, and Spirituality for Full Study*

| | *M* | *SD* |
|---|---|---|
| Trauma | 42.637 | 20.285 |
| PTG | 32.810 | 10.410 |
| Presence/Meaning | 28.055 | 4.118 |
| Search/Meaning | 30.602 | 4.389 |
| Ritualistic Spirituality | 37.759 | 10.637 |
| Theistic Spirituality | 35.091 | 14.180 |
| Existential Spirituality | 43.893 | 7.123 |

## Results

Demographic variables were examined for correlations with main study variables and were controlled for, as indicated below.

### Trauma Symptomology

Weiss et al. (2007) suggested a cutoff score of 33 for a possible clinical PTSD diagnosis when measuring trauma symptoms using the IES-R. In the present study, mean trauma symptomology scores ($M$ = 42.64, $SD$ = 20.29) suggested a likely high prevalence of clinically indicated PTSD, with 65.8% of scores ≥ 33. Trauma symptomology was significantly correlated with gender $r$ = -.151, $p$ = .020, with women having significantly higher scores $t$ (1, 235) = 2.35, $p$ = .020, women ($M$ = 45.04, $SD$ = 21.03) men ($M$ = 30.52, $SD$ = 8.70). Trauma symptomology was also significantly correlated with marital status $r$ = .234, $p$ < .001, and level of education $r$ = -.234, $p$ < .001. Trauma symptomology was not significantly correlated with spirituality. Regression analysis indicated that trauma symptomology positively and significantly predicted PTG (β = .351), $F$ (1, 235) = 32.94, $p$ < .001, adj $R^2$ = .119. One-way ANOVA indicated a significant difference in trauma symptomology across locations $F$ (3, 233) = 7.87, $p$ < .001, $\eta^2$= .092. Tukey's follow-up analysis indicated that Tamale statistically differed from all other locations (see Table 2).

**Table 2**

*Descriptive Statistics for Trauma, PTG, Meaning-Making, and Spirituality across Locations*

| *M, SD* | Tamale | Kumasi | Mpatoum | Dangbe West |
|---|---|---|---|---|
| Trauma | 52.87, 21.76 | 37.00, 15.97 | 40.24, 16.46 | 40.65, 21.44 |
| PTG | 41.60, 6.13 | 32.77, 10.25 | 27.03, 8.34 | 28.42, 9.59 |
| Presence/Meaning | 30.72, 3.21 | 28.71, 2.47 | 26.76, 4.69 | 25.93, 4.69 |
| Search/Meaning | 31.83, 3.16 | 31.97, 2.62 | 28.27, 5.44 | 29.40, 10.56 |
| Theistic Spirituality | 33.99, 16.18 | 24.82, 15.54 | 38.54, 12.04 | 46.83, 3.92 |
| Ritualistic Spirituality | 37.59, 10.55 | 28.36, 13.69 | 37.97, 8.43 | 36.60, 16.18 |
| Existential Spirituality | 46.83, 3.92 | 44.40, 4.68 | 40.10, 11.56 | 42.57, 7.81 |

**Posttraumatic Growth**

Correlational analysis indicated that PTG was significantly correlated with trauma symptomology $r = .351$, $p < .001$, search for meaning $r = .252$, $p < .001$, presence of meaning $r = .344$, $p < .001$, theistic spirituality $r = .141$, $p = .003$, ritualistic spirituality $r = .186$, $p = .005$, existential spirituality $r = .234$, $p < .001$, religious affiliation $r = .236$, $p < .001$, and all three trauma symptom clusters, intrusion $r = .286$, $p < .001$, avoidance $r = .361$, $p < .001$, and hyperarousal $r = .320$, $p < .001$. PTG was also significantly correlated with gender $r = -.202$, $p = .002$, with women having significantly higher scores $t(1, 235) = 3.12$, $p = .002$, ($M = 28.93$, $SD = 3.82$). One-way ANOVA indicated a significant difference in mean PTG scores across locations, $F(3, 233) = 30.45$, $p < .001$, $\eta^2 = .282$. Tukey's follow-up analysis indicated that Tamale and Kumasi statistically differed from all other locations (see Table 2).

**Meaning-Making**

Presence of meaning and trauma symptomology were not correlated, $r = 0.125$, $p = .055$. However, presence of meaning was positively correlated with PTG $r = .344$, $p < .001$, avoidance $r = 0.182$, $p = .005$, and religious affiliation $r = .271$, $p < .001$, and was highest for Muslim ($M = 31.00$, $SD = 3.64$), followed by Indigenous ($M = 29.67$, $SD = 3.69$), and Christian ($M = 27.28$, $SD = 3.97$). Presence of meaning was also significantly correlated with gender $r = -.233$, $p < .001$, with higher scores for women $t(1, 235) = 3.67$, $p < .001$, ($M = 28.93$, $SD = 3.82$). One-way ANOVA indicated a significant difference in presence of meaning across locations, $F(3, 233) = 20.98$, $p < .001$, $\eta^2 = .213$. Tukey's follow-up analysis indicated that Tamale statistically differed from all other locations (see Table 2).

Search for meaning was significantly correlated with PTG, $r = .252$, $p < .001$, trauma symptomology, $r = 0.158$, $p = .015$, intrusion, $r = 0.132$, $p = .043$, and avoidance, $r = 0.125$, $p = .055$, but not hyperarousal $r = 0.121$, $p = .063$. Correlation analysis indicated that search for meaning was significantly correlated with gender $r = -.188$, $p = .006$, with higher scores for women $t(1, 234) = 2.79$, $p = .006$, ($M = 31.32$, $SD = 3.72$). Search for meaning was not correlated with the other demographic variables.

One-way ANOVA indicated a significant difference in search for meaning across locations $F(3, 232) = 9.78$, $p < .001$, $\eta^2 = .112$. A Tukey's follow-up analysis indicated that Tamale and Kumasi were statistically different from the other locations (see Table 2).

## Spirituality

Total spirituality score was significantly correlated with PTG $r = .211$, $p = .001$, but not trauma symptomology scores or trauma symptom clusters. Additionally, the total spirituality score was significantly correlated with search for meaning $r = .132$, $p = .047$, religious affiliation $r = .183$, $p = .006$, education $r = -.186$, $p = .005$, and gender $r = -.199$, $p = .003$, and was higher for women $t$ (1, 225) = 3.04, $p < .003$, ($M = 121.4$, $SD = 24.79$).

### *Existential Spirituality*

Existential spirituality was significantly correlated with PTG $r = .234$, $p < .001$, search for meaning $r = .183$, $p = .005$, and presence of meaning $r = .200$, $p = .002$. It was not significantly correlated with trauma symptom clusters. One-way ANOVA indicated a significant difference in existential spirituality across locations $F$ (3, 229) = 7.76, $p < .001$, $\eta^2 = .092$. Tukey's follow-up analysis indicated that Tamale was statistically different from Mpatoum and the Dangme West District, and Kumasi differed from Mpatoum (see Table 2).

### *Ritualistic Spirituality*

Ritualistic spirituality was significantly correlated with religious affiliation $r = .181$, $p = .006$, level of education $r = -151$, $p = .021$, PTG $r = .186$, $p = .005$, and gender $r = -.258$, $p = .002$, and was highest for women $t(1, 230) = 4.04$, $p < .001$, ($M = 40.24$, $SD = 10.66$). It was not significantly correlated with any of the trauma symptom clusters. One-way ANOVA indicated a significant difference in ritualistic spirituality across locations $F(3, 228) = 12.12$, $p < .001$, $\eta^2 = .138$. Tukey's follow-up analysis indicated that Mpatoum significantly differed from all other locations (see Table 2).

### *Theistic Spirituality*

Theistic spirituality was significantly correlated with religious affiliation $r = .132$, $p = .044$, age $r = -.142$, $p = .029$, education $r = -210$, $p = .00,1$ and PTG $r = .141$, $p = .033$. It was not significantly correlated with trauma symptom clusters. One-way ANOVA indicated a significant difference in theistic spirituality across locations $F(3, 227) = 7.114$, $p < .001$, $\eta^2 = .086$. Tukey's follow-up analysis indicated that Mpatoum significantly differed from all other locations (see Table 2).

## Primary Analyses

We hypothesized that spirituality subtypes would be positively associated with trauma as predictors of PTG. Step 2 of this hierarchical regression model indicated that spirituality predicted 16.2% of the variance in PTG, but only existential spirituality was significant in the model, $F(4, 222) = 11.96$, $p < .001$. Therefore, theistic and ritualistic spirituality were excluded from all analyses going forward.

**Table 3**

*Hierarchical Regression Model for Trauma and Spirituality Variables Predicting PTG*

| Predictor Variables | B | *SE B* | *β* | *t* | *p* | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Step 1 | | | | | | .125 | .125 |
| Trauma | .181 | .032 | .354 | 5.68 | <.001 | | |
| Step 2 | | | | | | .177 | .052 |
| Trauma | .170 | .032 | .332 | 5.312 | <.001 | | |
| Ritualistic Spirituality | .074 | .077 | .076 | .966 | .335 | | |
| Theisistic Spirituality | .043 | .059 | .058 | .730 | .466 | | |
| Existential Spirituality | .246 | .098 | .162 | 2.51 | .013 | | |

It was also hypothesized that meaning-making would be positively associated with trauma as predictors of PTG. Step 2 of this hierarchical regression model indicated that meaning-making predicted 22.2% of the variance in PTG, $F$ (4, 222) = 11.96, $p < .001$. Both search for meaning and presence of meaning were significant in the model and were thus included in the final model.

**Table 4**

*Hierarchical Regression Model for Trauma and Meaning-Making Variables Predicting PTG*

| Predictor Variables | B | *SE B* | *β* | *t* | *p* | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Step 1 | | | | | | .118 | .122 |
| Trauma | .180 | .032 | .354 | 5.71 | <.001 | | |
| Step 2 | | | | | | .222 | .109 |
| Trauma | .151 | .030 | .293 | 5.00 | <.001 | | |
| Presence/Meaning | .692 | .051 | .274 | 4.59 | <.001 | | |
| Search/Meaning | .325 | .143 | .137 | 2.28 | .023 | | |

Hierarchal regression analysis was used to test our overarching hypothesis that meaning-making and spirituality interact with trauma symptomology to predict PTG. Gender, which was significantly correlated with all study variables, was accounted for in Step 1. Step 2 indicated that gender and trauma symptoms predicted 13.2% of the variance in PTG, $F$ (2, 229) = 18.63, $p < .001$. Step 3 indicated that adding meaning-making and presence of meaning predicted 21.6% of the variance in PTG, $F$ (4, 227) = 16.93, $p < .001$. Step 4 indicated that adding existential spirituality predicted 23.1% of the variance in PTG, $F$ (5, 226) = 14.86, $p < .001$. $R$ increased steadily throughout the hierarchal regression, indicating that each new variable added to the strength of the model.

**Table 5**

*Hierarchical Regression Model for Gender, Trauma, Meaning-Making, and Spirituality Predicting PTG*

| Predictor Variables | B | *SE B* | *β* | *t* | *p* | $R^2$ | Δ $R^2$ |
|---|---|---|---|---|---|---|---|
| Step 1 | | | | | | .035 | .035 |
| Gender | -3.90 | 1.35 | -.187 | -2.89 | .004 | | |
| Step 2 | | | | | | .140 | .132 |
| Gender | -2.89 | 1.29 | -.138 | -2.23 | .026 | | |
| Trauma | .168 | .032 | .328 | 5.29 | <.001 | | |
| Step 3 | | | | | | .230 | .216 |
| Gender | -1.36 | 1.27 | -.062 | -1.02 | .307 | | |
| Trauma | .146 | .031 | .285 | 4.77 | <.001 | | |
| Presence/Meaning | .636 | .154 | .254 | 4.13 | <.001 | | |
| Search/Meaning | .312 | .146 | .131 | 2.13 | .034 | | |
| Step 5 | | | | | | .247 | .231 |
| Gender | -1.11 | 1.26 | -.053 | -.884 | .377 | | |
| Trauma | .144 | .030 | .280 | 4.74 | <.001 | | |
| Presence/Meaning | .585 | .154 | .233 | 3.80 | <.001 | | |
| Search/Meaning | .271 | .146 | .113 | 1.85 | .065 | | |
| Existential Spirituality | .200 | .087 | .137 | 2.30 | .022 | | |

## Discussion

Individual and collective traumas, such as the COVID-19 pandemic, are increasingly prevalent worldwide. The African continent has encountered significant challenges, such as widespread viral outbreaks and political unrest, and, like much of the Global South, is projected to realize the greatest effects of climate change (Ibe & Amikuzono, 2019). Additionally, violence and social instability have become pervasive in some regions of Africa, further exacerbating trauma. Understanding factors that influence PTG is important in effectively addressing the consequences of trauma. This study provides a foundational understanding of the role of gender, meaning-making, and spirituality in influencing PTG during the COVID-19 pandemic in Ghana.

### Trauma Symptomology

The IES-R was used to assess overall trauma symptomology in the context of the COVID-19 pandemic, with results indicating the likelihood of a clinical diagnosis of PTSD for 65.8% of participants. The foundational symptoms of PTSD are often considered universal (Foa et al., 2009), but some trauma reactions vary across cultures (Patel & Hill, 2021). Referred to as *idioms of distress,* one example is intrusion, which is often described as "thinking too much" in Ghana (Backe et al., 2021; Kaiser et al., 2015). In the present study, women had significantly higher trauma symptom scores across all locations, with the highest mean scores in Tamale. While women reported higher rates of all three trauma symptom clusters, only avoidance and intrusion significantly differed across genders. Older individuals were more

likely to experience intrusion and hyperarousal than avoidance. PTG was significantly and positively correlated with all three trauma symptom clusters. Additionally, higher search for meaning was positively correlated with trauma symptomology, indicating that individuals actively searching for meaning in their lives may be experiencing greater levels of psychological distress. Also, both search for meaning and presence of meaning were positively correlated with avoidance and intrusion, but not hyperarousal.

**Differences in Trauma Symptomology Across Locations**

Trauma symptomology mean scores were significantly higher in Tamale, which is located in northern Ghana. Despite funding and foreign aid, areas in the north of Ghana, where communities survive primarily through agrarian practices, continue to experience higher rates of poverty and a lack of political influence (Abdulai & Hulme, 2015). This pattern of inequities was further exacerbated by the COVID-19 pandemic, whereby northern areas experienced less availability of healthcare resources and higher stressors associated with the prevention of vector-borne and non-communicable diseases (Novignon & Tabiri, 2022; Heuschen et al.,2022; Kanligi et al., 2022). Additionally, there are vast regional and urban-rural disparities in access to potable water in Ghana, with northern Ghana affected the most, partially due to its reliance on subsistence agriculture (Abass & Jeil, 2020). Adverse effects of water scarcity in northern Ghana disproportionately affect women and girls as they bear the primary responsibility of water collection (Abass & Jaill, 2020).

Further, in many communities in northern Ghana, women and girls are required to keep a separate container of water for sanitation purposes during menstruation. Thus, the higher mean scores of trauma symptomology among participants in Tamale may be due to sociocultural and socioeconomic factors such as gendered social norms, marginalization, and poverty that may limit their access to resources to cope with stressful and traumatic events. Previous studies in other contexts suggest that cultural differences in emotional expression (Soto et al., 2005), perceived discrimination (Sibrava et al., 2019), pervasive marginalization (Franklin & Boyd-Franklin, 2000) and poor socioeconomic conditions (Roberts et al., 2011) are associated with worsening posttraumatic symptoms.

**Posttraumatic Growth**

As expected, PTG was significantly and positively correlated with trauma symptomology. It was similarly associated with search for meaning, presence of meaning, all spirituality subtypes, all trauma symptom clusters, and religious affiliation. As with trauma symptomology, PTG was significantly higher for women across all locations. Research indicates that psychoeducation, emotional regulation, disclosure, narrative development, and service are the most prominent pathways for PTG (Tedeschi & Calhoun, 1995). Additionally, emotional regulation, increased intimacy, enhanced sense of personal strength, greater appreciation of life, recognition of new possibilities, and spiritual development are key domains of PTG (Kira et al., 2020; Tedeschi & Calhoun, 1995), with specific cognitive-emotional regulation strategies differentiating patterns of symptom presentation for PTSD and PTG (Zhen & Zhou, 2022). Evidence also suggests that both presence of meaning and search for meaning are significant contributors to PTG following disasters (Boullion et al., 2020). Psychosocial and educational interventions aimed at encouraging the development of coping

mechanisms, emotional regulation skills, and meaning-making, especially those with a spiritual or religious component, may be key to developing PTG following trauma in Ghana.

**Spirituality**

Consistent with previous research in Ghana, 100% of participants in the current study identified with some form of religious affiliation or spiritual practice. Religious affiliation and spirituality featured prominently in the conceptualization and meaning-making of presenting problems and choice of coping strategies. Further, religious coping is well-established in many African countries (Gyekye, 2003; Yirdong et al., 2023). Results indicated that meaning-making, primarily searching for meaning, spirituality, and religious affiliation, predict PTG, especially for women. Existential spirituality was the only significant spirituality predictor in the hierarchal regression model; it was significantly and positively associated with search for meaning, presence of meaning, and PTG but not with trauma symptomology. Results indicate that engaging in existential spiritual practice can be part of effective interventions for trauma symptomology, specifically for avoidance, intrusion, and hyperarousal.

Existential spirituality refers to an individual's search for meaning, purpose, and transcendence (Webster, 2010). In Ghana, this type of spirituality is often rooted in traditional beliefs and practices but has also been influenced by Christianity and Islam (Akparibo & Donkor, 2021). Traditional Ghanaian religion is characterized by a belief in a Supreme Being or creator and a variety of lesser deities associated with different aspects of nature and human life. These deities are often seen as intermediaries between humans and the divine, and traditional religious practices often involve rituals and ceremonies designed to maintain a harmonious relationship between humans and the spiritual world (Amoah, 2016). In recent years, there has been a growing interest in existential spirituality and mental health in Ghana (Kyei et al., 2014). Further, Ghanaians have a history of using religion to find meaning in the face of existential crisis (Osafo et al., 2013; 2023).

Religious involvement has been associated with increased social support and meaning-making (Braam & Koenig, 2019), and spiritual well-being has been correlated with reduced psychological distress across cultures (Coppola et al., 2021; Margetic et al., 2022; Sharif et al., 2022). Multiple studies indicate that interventions with religious or spiritual components can reduce PTSD symptoms (Bormann et al., 2013; Harris et al., 2018; Oman & Bormann, 2015). For example, mantram (sacred word) repetition, yoga, meditation, and mindfulness have all been associated with positive coping and recovery from PTSD symptoms (Borman et al., 2017; Fiore et al., 2014). Religious and spiritual practice may be among the few available supports for individuals without access to adequate mental health support when coping with traumatic events. Integrating local and personal religious or spiritual practice with mental health interventions may provide accessible and low-cost treatment options in resource-poor settings.

**Protective and Risk Factors**

Results indicate that women experienced higher levels of trauma during the COVID-19 pandemic in Ghana. We found that education, marriage, meaning-making, and engaging in existential spirituality may be protective factors against trauma symptomology, particularly for women. Living in northern Ghana, where there is a disproportionate lack of access to resources such as healthcare facilities, water, and education, is also a risk factor for women. Ghana has

made great progress towards gender parity in education, ranking 7th in sub-Saharan Africa in 2019 with a score of 61%. Similarly, Ghanaian literacy rates increased from 57.9% in 2000 to 80.38% in 2020, and primary education enrollment is now among the highest in sub-Saharan Africa (UNICEF, 2023). However, there are still significant disparities in education rates between rural and urban areas and between men/boys and women/girls. Further, Ghana has struggled with regional inequities for much of its history (Abdulai & Hulme, 2015; Baada et al., 2021). Supporting education as a bolster for psychological health is an essential pathway to empowerment for women in Ghana.

Additionally, although 57% of Ghanaian women are married, child marriage remains high, with 21% of girls married before 18 (Ghana Statistical Service, 2023). Overall, child marriage rates are higher in northern Ghana, which may be due to cultural and religious influences. Women and girls are disproportionately affected by natural and humanmade disasters across the African continent. Culturally relevant approaches that foster PTG through meaning-making and spiritual practice, as well as interventions that improve perceived social support (Simon et al., 2019) and empower women and girls, may help ameliorate the effects of trauma.

## Conclusion

Spirituality and religious affiliation play a fundamental role in shaping cultural identity and fostering social cohesion within sub-Saharan Africa. Our study suggests that existential spirituality, particularly for Ghanaian women, may coincide with higher levels of meaning-making during difficult times. In addition, while education and marriage are protective factors for women against the likely development of PTSD, child marriage rates in Ghana need to be addressed within a human rights framework. These findings underscore the importance of adopting and developing culturally sensitive approaches in mental health care that address the unique experiences of African individuals. Additionally, interventions that improve perceived social support can contribute to better mental health outcomes.

Recognizing and valuing African cultural practices and knowledge systems should be integrated into mental health interventions and organizational approaches to collective traumatic events. Further, it is crucial to emphasize the need to incorporate traditional healing practices and spiritual beliefs as essential components in the conceptualization, management, and treatment of trauma-related symptoms within African contexts. This necessitates collaboration with traditional healers, religious leaders, and community rituals alongside or in conjunction with other evidence-based interventions. By embracing culturally relevant approaches, mental health professionals can effectively support individuals in their pursuit of healing and growth, particularly in the face of increasing global crises.

## Limitations

Baseline levels for trauma symptomology pre-pandemic were unavailable. Additionally, it was not possible to control for confounding contributors to trauma symptomology. Although local interpreters and translators were utilized, inaccurate translation of assessment tools, interviews, and diagnostic criteria may have occurred, potentially leading to misinterpretations and inconsistencies in measuring trauma symptoms in a cross-cultural context. Further, the cultural context in which trauma occurs can influence the perception,

interpretation, and reporting of traumatic events. Therefore, differences in cultural norms, beliefs, and values may affect the prevalence, manifestation, and recognition of trauma symptoms. Cultural variations in trauma experiences, coping strategies, and social support networks may limit the extent to which findings can be extrapolated.

## References

Abass, K. & Jail, E. (2020). How water scarcity adds to women's burden in northern Ghana. *The Conversation*. https://theconversation.com/how-water-scarcity-adds-to-womens-burden-in-northern-ghana-138357

Adjorlolo, S., Adjorlolo, P., Andoh-Arthur, J., Ahiable, E.K., Kretchy, I.A., & Osafo, J. (2022). Posttraumatic growth and resilience among hospitalized COVID-19 survivors: A gendered analysis. *Int. J. Environ. Res. Public Health*, *19*, 10014. https://doi.org/ks7r

Aglozo, E. Y., Akotia, C. S., Osei-Tutu, A., & Annor, F. (2019). Spirituality and subjective well-being among Ghanaian older adults: Optimism and meaning in life as mediators. *Aging & Mental Health, 25*(2), 306-315. https://doi.org/ghcc4j

Asante, D., Twumasi, M. A., Sakyi, A. S., Gyamerah, S., & Asante, B. (2021). A socio-geographic perspective of health and economic impacts of COVID-19 on poor households in Ghana. *Geo Journal, 87*(5), 4113-4125. https://doi.org/10.1007/s10708-021-10487-2

Asukai, N., Kato, H., Kawamura, N., Kim, Y., Yamamoto, K., Kishimoto, J., Miyake, Y., & Nishizono-Maher, A. (2002). Reliability and validity of the Japanese-language version of the Impact of Event Scale-Revised (IES-R-J): Four studies of different traumatic events. *The Journal of Nervous and Mental Disease, 190*(3), 175-182. https://doi.org/dqnhn4

Backe, E. L., Bosire, E. N., Kim, A. W., & Mendenhall, E. (2021). "Thinking too much": A systematic review of the idiom of distress in Sub-Saharan Africa. *Culture, Medicine, and Psychiatry*, 1-28. https://doi.org/10.1007/s11013-020-09697-z

Bormann, J. E., Thorp, S. R., Wetherell, J. L., Golshan, S., & Lang, A. J. (2013). Meditation-based mantram intervention for veterans with posttraumatic stress disorder: A randomized trial. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(3), 259–267. https://doi.org/f4z4dt

Braam, A. W., & Koenig, H. G. (2019). Religion, spirituality and depression in prospective studies: A systematic review. Journal of Affective Disorders, 257, 428–438. https://doi.org/gg8fdk

Boullion, G. Q., Pavlacic, J. M., Schulenberg, S. E., Buchanan, E. M., & Steger, M. F. (2020). Meaning, social support, and resilience as predictors of posttraumatic growth: A study of the Louisiana flooding of August 2016. *American Journal of Orthopsychiatry, 90*(5), 578-585. https://doi.org/gntwqc

Cann, A., Calhoun, L. G., Tedeschi, R. G., Taku, K., Vishnevsky, T., Triplett, K. N., & Danhauer, S.
C. (2010). A short form of the Posttraumatic Growth Inventory. *Anxiety, Stress, & Coping, 23*(2), 127-137. https://doi.org/bc26gc

Chamaa, F., Bahmad, H. F., Darwish, B., Kobeissi, J. M., Hoballah, M., Bou Nassif, S., Ghandour, Y., Saliba, J.-P., Lawand, N., & Abou-Kheir, W. (2021). PTSD in the COVID-19 Era. *Current Neuropharmacology, 19*(12), 2164–2179. https://doi.org/gq73x9

Chang, E. C., Jilani, Z., Yu, T., Fowler, E. E., Lin, J., Webb, J. R., & Hirsch, J. K. (2015). Fundamental dimensions of personality underlying spirituality: Further evidence for the construct validity of the rite measure of spirituality. *Personality and Individual Differences, 75*, 175-178. https://doi.org/f6x4v2

Charak, R., Cano-Gonzalez, I., Shevlin, M., Ben-Ezra, M., Karatzias, T., & Hyland, P. (2022). Dimensional latent structure of ICD-11 posttraumatic stress disorder, complex PTSD, and adjustment disorder: Evidence from Ghana, Kenya, and Nigeria. *Traumatology, 28*(2), 223–234. https://doi.org/ks7s

Cheng N.I., Tabong P.T., Netongo P.M., Mensah B.A., Chu C.E., Yaw E.B., Enos J.Y., Malm K., Ahorlu C.S. (2022). The impact of COVID-19 on implementation of mass testing, treatment and tracking of malaria in rural communities in Ghana: A qualitative study. *PLoS ONE*, 17: e0275976. https://doi.org/10.1371/journal.pone.0275976

Park, C. L. (2016). Meaning-making in the context of disasters. *Journal of Clinical Psychology*, *72*(12), 1234-1246. https://doi.org/10.1002/jclp.22270

Coppola, I., Rania, N., Parisi, R., & Lagomarsino, F. (2021). Spiritual well-being and mental health during the COVID-19 pandemic in Italy. *Frontiers in Psychiatry, 12*. https://doi.org/gjxrvk

Creamer, M., Bell, R., & Failla, S. (2003). Psychometric properties of the impact of event scale—Revised. Behaviour Research and Therapy, 41(12), 1489-1496. https://doi.org/dczsj5

Foa, E. B, Keane T. M, Friedman M. J, Cohen J. A. Effective treatments for PTSD (2009). *Practice guidelines from the International Society for Traumatic Stress Studies*. 2nd ed. Guilford Press.

García, F. E., & Wlodarczyk, A. (2016). Psychometric properties of the posttraumatic growth inventory–short form among Chilean adults. *Journal of Loss and Trauma, 21*(4), 303-314. https://doi.org/ks7t

Gómez-Acosta, A., Ramos-Vera, C., & Sierra Baron, W. (2023). Validation of an ultra-short version of the posttraumatic growth inventory in Colombian adults exposed to COVID-19. *Death Studies, 47*(4), 490-498. https://doi.org/10.1080/07481187.2022.2098415

Fiore, R., Nelson, R., & Tosti, E. (2014). The use of yoga, meditation, mantram, and mindfulness to enhance coping in veterans with PTSD. *Therapeutic Recreation Journal*, *48*(4), 337-340.

Franklin, A. J. & Boyd-Franklin, N. (2000). Invisibility syndrome: A clinical model of the effects of racism on African-American males. *American Journal of Orthopsychiatry*, 70(1), 33-41. https://doi.org/10.1037/h0087691

Ghana Statistical Service. (2023). https://statsghana.gov.gh/gsspublications.php?category=OTc2NDgyNTUzLjkzMDU=/webstats/p9r0796n5o#

Gyasi, R. M., Asante, F., Abass, K., Yeboah, J. Y., Adu-Gyamfi, S., & Amoah, P. A. (2016). Do health beliefs explain traditional medical therapies utilisation? Evidence from

Ghana. *Cogent Social Sciences, 2*(1), 1209995. https://doi.org/10.1080/23311886.2016.1209995

Gyekye, K. (2003). *African Cultural Values: An Introduction* (Reprinted.). Accra: Sankofa Publishing Company.

Harris, J. I., Usset, T., Voecks, C., Thuras, P., Currier, J., & Erbes, C. (2018). Spiritually integrated care for PTSD: A randomized controlled trial of "Building spiritual strength." *Psychiatry Research, 267*, 420-428. https://doi.org/10.1016/j.psychres.2018.06.045

Ibe, G. O., & Amikuzuno, J. (2019). Climate change in Sub-Saharan Africa: A menace to agricultural productivity and ecological protection. *Journal of Applied Sciences and Environmental Management, 23*(2), Article 2. https://doi.org/10.4314/jasem.v23i2.20

JASP Team (2023). JASP (Version 0.17.1) [Computer software].

Kaiser, B. N., Haroz, E. E., Kohrt, B. A., Bolton, P. A., Bass, J. K., & Hinton, D. E. (2015). "Thinking too much": A systematic review of a common idiom of distress. *Social Science & Medicine, 147*, 170-183. https://doi.org/10.1016/j.socscimed.2015.10.044

Kanzler, K. E., & Ogbeide, S. (2020). Addressing trauma and stress in the COVID-19 pandemic: Challenges and the promise of integrated primary care. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S177-S179. https://doi.org/ghc52m

King, L. A., & Hicks, J. A. (2021). The science of meaning in life. *Annual Review of Psychology*, *72*(1), 561-584. https://doi.org/10.1146/annurev-psych-072420-122921

Kira, I. A., Arıcı Özcan, N., Shuwiekh, H., Kucharska, J., Al-Huwailah, A. H., & Kanaan, A. (2020). The compelling dynamics of "will to exist, live, and survive" on effecting posttraumatic growth upon exposure to adversities: Is it mediated, in part, by emotional regulation, resilience, and spirituality? *Traumatology, 26*(4), 405. https://doi.org/10.1037/trm0000263

Korang-Okrah, R., Haight, W., Gibson, P., & Black, J. (2017). Solutions to property rights 'violations' experienced by Ghanaian (Akan) widows and their children: The role of international social workers in addressing human rights. International Social Work, 62(1), 405-418. https://doi.org/10.1177/0020872817731141

Kyei, J. J., Dueck, A., Indart, M. J., & Nyarko, N. Y. (2014). Supernatural belief systems, mental health and perceptions of mental disorders in Ghana. *International Journal of Culture and Mental Health, 7*(2), 137–151. https://doi.org/10.1080/17542863.2012.734838

Lysne, C. J., & Wachholtz, A. B. (2010). Pain, spirituality, and meaning-making: What can we learn from the literature? *Religions, 2*(1), 1-16. https://doi.org/10.3390/rel2010001

Mattis, J. S. (2002). Religion and spirituality in the meaning-making and coping experiences of African American women: A qualitative analysis. *Psychology of Women Quarterly*, *26*(4), 309-321. https://doi.org/10.1111/1471-6402.t01-2-00070

Mate-Kole, C. C. (2013). Psychology in Ghana revisited. *Journal of Black Psychology*, *39*(3), 316-320. https://doi.org/10.1177/0095798413480664

Minkus, H. K. (1980). The concept of spirit in Akwapim Akan philosophy. *Africa, 50*(2), 182-192. https://doi.org/10.2307/1159010

Narain K., Rackimuthu S., Nawaz F.A., Okonji O.C., Ashworth H., Du Plessis S.S., Shah J. Strategies for malaria vaccination during the COVID-19 pandemic in African countries (2022). Bulletin. *World Health Organization*, 100:582. https://doi.org/10.2471/BLT.21.287472.

Ofei, S. D., Teye-Kwadjo, E., Amankwah-Poku, M., Gyasi-Gyamerah, A. A., Akotia, C. S., Osafo, J., Roomaney, R., & Kagee, A. (2023). Determinants of posttraumatic growth and quality of life in Ghanaian breast cancer survivors. *Cancer Investigation, 41*(4), 379-393. https://doi.org/ks7v

Olapegba, P. O., Ayandele, O., Kolawole, S. O., Oguntayo, R., Gandi, J. C., Dangiwa, A. L., & Iorfa, S. K. (2020). COVID-19 knowledge and adherence to safety measures among healthcare workers in Africa: A cross-sectional study. *BMC Public Health, 20*(1), 1924. https://doi.org/10.1186/s12889-020-09933-0

Oman, D., & Bormann, J. E. (2015). Mantram repetition fosters self-efficacy in veterans for managing PTSD: A randomized trial. *Psychology of Religion and Spirituality, 7*(1), 34-45. https://doi.org/10.1037/a0037994

Opoku, J. K., Manu, E., & Enin Antwi E. K. (2018). Spirituality and healing: Perceptions and implications on the Akan of Ghana. *Advances in Social Sciences Research Journal, 5*(8). https://doi.org/10.14738/assrj.58.5042

Osafo, J., Knizek, B. L., & Akotia, C. S. (2013). The relationship between existential spirituality and mental health: A case for African American and Ghanaian college students. *Journal of Black Psychology, 39*(3), 239-253. https://doi.org/10.1177/1363461511417319

Osafo, J., Asare-Doku, W., & Akotia, C. S. (2023). Exploring the role of religion in the recovery experiences of suicide attempt survivors in Ghana. *BMC Psychiatry, 23*(1). https://doi.org/ks73

Ostafin, B. D., & Proulx, T. (2020). Meaning in life and resilience to stressors. *Anxiety, Stress, & Coping, 33*(6), 603-622. https://doi.org/10.1080/10615806.2020.1800655

Parry, S., Cox, N., Andriopoulou, P., Oldfield, J., Roscoe, S., Palumbo-Haswell, J. & Collins, S. (2023). Mechanisms to enhance resilience and posttraumatic growth in residential care: A narrative review. *Adversity and Resilience Science,* 4, 1–21. https://doi.org/ks7w

Paloutzian, R. F., & Park, C. L. (2021). The psychology of religion and spirituality: How big the tent? *Psychology of Religion and Spirituality, 13*(1), 3–13. https://doi.org/ks7x

Patel, A. R., & Hall, B. J. (2021). Beyond the *DSM-5* diagnoses: A cross-cultural approach to assessing trauma reactions. *FOCUS, 19*(2), 197-203. https://doi.org/ks7z

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). Race/ethnic differences in exposure to traumatic events, development of posttraumatic stress disorder, and treatment-seeking for posttraumatic stress disorder in the United States. *Psychological Medicine, 41*(1), 71-83. https://doi.org/10.1017/s0033291710000401

Serafini, G., Parmigiani, B., Amerio, A., Aguglia, A., Sher, L., & Amore, M. (2020). The psychological impact of COVID-19 on the mental health in the general population. *QJM: An International Journal of Medicine, 113*(8), 531–537. https://doi.org/10.1093/qjmed/hcaa201

Sharif Nia, H., Gorgulu, O., Naghavi, N., Robles-Bello, M. A., Sánchez-Teruel, D., Khoshnavay Fomani, F., She, L., Rahmatpour, P., Allen, K., Arslan, G., & Pahlevan Sharif, S. (2022). Spiritual well-being, social support, and financial distress in determining depression: The mediating role of impact of event during COVID-19 pandemic in Iran. *Frontiers in Psychiatry, 12*. https://doi.org/10.3389/fpsyt.2021.754831

Sibrava, N. J., Bjornsson, A. S., Pérez Benítez, A. C., Moitra, E., Weisberg, R. B., & Keller, M. B. (2019). Posttraumatic stress disorder in African American and Latinx adults: Clinical course and the role of racial and ethnic discrimination. *American Psychologist, 74*(1), 101-116. https://doi.org/10.1037/amp0000339

Simon, N., Roberts, N. P., Lewis, C. E., Van Gelderen, M. J., & Bisson, J. I. (2019). Associations between perceived social support, posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD): Implications for treatment. *European Journal of Psychotraumatology, 10*(1). https://doi.org/10.1080/20008198.2019.1573129

Soto, J. A., Levenson, R. W., & Ebling, R. (2005). Cultures of moderation and expression: Emotional experience, behavior, and physiology in Chinese Americans and Mexican Americans. *Emotion, 5*(2), 154-165. https://doi.org/10.1037/1528-3542.5.2.154

Steger, M. F. (2021). Meaning in life: A unified model. In C. R. Snyder, S. J. Lopez, L. M. Edwards, & S. C. Marques (Eds.), *Oxford Handbook of Positive Psychology* (3rd ed., pp. 679–688). Oxford University Press.

Suárez Álvarez, J., Pedrosa, I., Lozano, L. M., García Cueto, E., Cuesta Izquierdo, M., & Muñiz Fernández, J. (2018). Using reversed items in Likert scales: A questionable practice. *Psicothema,* 30.

Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering.* Sage. http://dx.doi.org/10.4135/9781483326931

Tedeschi, R. G., & Moore, B. A. (2021). Posttraumatic growth as an integrative therapeutic philosophy. *Journal of Psychotherapy Integration, 31*(2), 180. https://doi.org/gkmzfd

Tedeschi, R. G., Shakespeare-Finch, J., Taku, K., & Calhoun, L. G. (2018). Theories related to posttraumatic growth. *Posttraumatic Growth*, 60-80. https://doi.org/10.4324/978131552745-8

UN Women. (2020). What happened after COVID-19 hit Ghana? https://www.unwomen.org/en/news/stories/2020/12/what-happened-after-covid-19-hit-ghana

UNICEF. (2023). *Education*. https://www.unicef.org/ghana/education

UNICEF Ghana. (2023). *Ending Child Marriage*. https://www.unicef.org/ghana/ending-child-marriage

Vis, J., & Marie Boynton, H. (2008). Spirituality and transcendent meaning-making: Possibilities for enhancing posttraumatic growth. *Journal of Religion & Spirituality in Social Work: Social Thought, 27*(1-2), 69-86. https://doi.org/10.1080/15426430802113814

Webb, J. R., Toussaint, L., & Dula, C. S. (2014). Ritualistic, theistic, and existential spirituality: Initial psychometric qualities of the rite measure of spirituality. *Journal of Religion and Health*, *53*(4), 972-985. https://doi.org/10.1007/s10943-013-9697-y

Weiss, D. S. (2007). The impact of event scale: Revised. *Cross-Cultural Assessment of Psychological Trauma and PTSD*, 219-238. https://doi.org/10.1007/978-0-387-70990-1_10

WIN-Gallup International. (2012). *Global index of religiosity and atheism*. WIN-Gallup International.

Witmer, F. D., Linke, A. M., O'Loughlin, J., Gettelman, A., & Laing, A. (2017). Subnational violent conflict forecasts for sub-Saharan Africa, 2015–65, using climate-sensitive models. *Journal of Peace Research, 54*(2), 175–192. https://doi.org/10.1177/0022343316682064

World Economic Forum. (2020). *COVID-19 is exacerbating food shortages in Africa*. https://www.weforum.org/agenda/2020/04/africa-coronavirus-covid19-imports-exports-food-supply-chains

World Food Programme. (2020). Economic and Market Impact Analysis of COVID-19 on West and Central Africa. ReliefWeb - Informing humanitarians worldwide. https://reliefweb.int/sites/reliefweb.int/files/resources/WFP-0000113974.pdf

Worthington, E. L., & Sandage, S. J. (2001). Religion and spirituality. *Psychotherapy, 38*(4), 473–478. https://doi.org/10.1037/0033-3204.38.4.473

Yirdong, F., Anim, M. T., Nkyi, A. K., & Ocansey, F. (2023). Religious coping and depressive symptoms in people living with HIV in Ghana. *Mental Health, Religion & Culture*, 1-15. https://doi.org/10.1080/13674676.2022.2164567

Zhen, R., & Zhou, X. (2022). Latent patterns of posttraumatic stress symptoms, depression, and posttraumatic growth among adolescents during the COVID-19 pandemic. *Journal of Traumatic Stress, 35*(1), 197-209. https://doi.org/10.1002/jts.22720

Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology - A critical review and introduction of a two component model. Clinical Psychology Review, 26, 626–653. http://dx.doi.org/10 .1016/j.cpr.2006.01.008