

Associations between Family Maltreatment Perpetration and Latent Profiles of Personal and Family Strengths among Active-Duty Air Force Members

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Abstract

Although individual and family strengths have been found to impact family maltreatment risk, optimal approaches to their assessment are lacking. To substantiate the utility of holistically assessing multiple strengths among active-duty Air Force members (i.e., Airmen) who might be at risk of perpetrating family maltreatment, the current study aimed to identify latent patterns of personal and family strengths among Airmen and assess associations with family maltreatment perpetration. A representative sample of 30,187 Airmen from the 2011 Air Force Community Assessment Survey was used to identify patterns across latent-factor scores representing unit leader support, informal support, family functioning, individual fitness, and personal resilience. Latent profile analysis was conducted to extract an optimal number of response patterns and estimate associations with family maltreatment perpetration. A five-profile solution was optimal, representing patterns marked by *low* (10%), *below average* (26%), *mixed* (16%), *above average* (36%), and *high* (12%) levels of personal and family strengths. Predicted probabilities of family maltreatment among families not identifying as stepfamilies were 39%, 21%, 14%, 10%, and 8% across *low*, *below average*, *mixed*, *above average*, and *high* patterns, respectively. Among stepfamilies (20% of sample), predicted probabilities were 49%, 29%, 21%, 15%, and 12%, respectively. Findings encourage a holistic assessment of personal and family strengths among Airmen. The Personal and Family Strengths Inventory, which was developed to gauge these strengths, can position practitioners well to engage Airmen in conversations around strengths and growth opportunities for the purposes of service planning aimed at preventing family maltreatment.

Keywords Air Force · Family · Strengths · Maltreatment · Violence · Wellness · Military

Family maltreatment, a persistent public health challenge, can be defined as the perpetration of any non-accidental physical, sexual, or emotional trauma, abuse or neglect on a partner or child (Air Force Instruction 40–301, 30 November, 2009). Exposure to various forms of family maltreatment is associated with behavioral, psychological, and physical health challenges among adults and children (Alink et al., 2012; Coker

et al., 2002; Norman et al., 2012). Given the unique demands associated with military life (MacDermid Wadsworth, 2010), military-connected families are not immune to family maltreatment. Military members who perpetrate family maltreatment are recognized as behaviorally compromised and are required to engage in remedial interventions (Smith Slep et al., 2010, 2011). Consequently, efforts to prevent family maltreatment are warranted, both to promote mission readiness among active-duty personnel and to cultivate well-being among military-connected families.

Recent work has been undertaken to bolster family maltreatment prevention among active-duty United States Air Force (USAF) members, or Airmen. This work has resulted in the development of a research-informed logic model for family maltreatment prevention (refer to Bowen et al., 2017; Jensen & Bowen, 2018) and a corresponding assessment

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tool—the Personal and Family Strengths Inventory (PFSI; Jensen, Bowen, & U.S. Air Force Family Advocacy Program, 2019), which is currently in early stages of implementation. The PFSI is designed to help USAF practitioners engage Airmen and discuss key dimensions of the logic model, ultimately informing a process of service selection and delivery to strengthen families and prevent family maltreatment. To further substantiate the utility of assessing logic model components holistically in practice via the PFSI, the purpose of the current study is to analyze secondary data from a large, representative sample of Airmen to (a) identify extant patterns of personal and family strengths reflected in the PFSI, (b) assess whether pattern membership is associated with self-reported family maltreatment perpetration, and (c) assess whether pattern membership is associated with the intention to seek formal services. In addition, we explore pattern differences with respect to family context, community safety, and socio-demographic characteristics. To frame our study, we begin by reviewing the military context, summarizing family maltreatment prevention efforts in the USAF, and reviewing past research informing our proposed analyses.

USAF Context and Family Maltreatment Prevention

In 2018, over 2.1 million military members with 2.6 million family member beneficiaries served on active duty, in the National Guard, or in the Reserves (Department of Defense, 2019). Of those, 1.3 million members served on active duty, and over half of active-duty members were married or had children (52.3%), resulting in nearly 1.6 million active-duty family member beneficiaries (Department of Defense, 2019). In addition to its large size and distinct cultural milieu (Meyer et al., 2016), the military places unique demands on its members and their families, including deployments, frequent family relocations, and exposure to combat-related trauma, among others (MacDermid Wadsworth, 2010). This context has implications for family processes and outcomes, including experiences with family maltreatment.

Turning to the USAF context specifically, estimates from 2018 yielded a population size of 321,618 active-duty members, 68,703 Air Force Reservists, and 107,469 Air National Guard members (Department of Defense, 2019). Stakeholders overseeing the Family Advocacy Program in the Air Force Medical Readiness Agency have endeavored to focus not only on intervening when substantiated cases of family maltreatment occur within this population, but also on strategies to prevent family maltreatment among those who are most at risk (i.e., secondary prevention). These prevention efforts have yielded a research-informed logic model developed based on empirically significant correlates of family maltreatment among active-duty USAF personnel (Bowen et al., 2017; Jensen & Bowen, 2018).

Consistent with family resilience and ecosystems theories (Henry et al., 2015; Rosa & Tudge, 2013), the logic model's components are directly and indirectly associated with family maltreatment perpetration, and include (a) *unit leader support* (e.g., unit leaders facilitating connections among Airmen and highlighting available services and resources), (b) *informal support* (e.g., connections with neighbors, friends, and co-workers), (c) *family functioning* (referred to as “safe, stable, and nurturing families” in the PFSI), (d) *individual fitness* (e.g., physical health, mental health), and (e) *personal resilience* (i.e., self-assessed capacity to successfully manage adversity; Bowen et al., 2017; Jensen & Bowen, 2018). From these perspectives, an Airman's perpetration of family maltreatment is conceptualized as an inability to positively adapt and successfully perform roles over time in the context of risks and vulnerabilities (Bowen & Martin, 2011; Bowles et al., 2015). Although that perspective is somewhat deficit-based, previous studies have found that cultivating personal resilience—a strengths-based counterpoint—can effectively reduce family maltreatment risk (Jensen & Bowen, 2018).

To apply the knowledge represented in the logic model, an assessment tool—the PFSI—was developed in partnership with USAF Family Advocacy Program leadership. The tool was intended to aid USAF practitioners in engaging with Airmen to identify suitable services to build on personal and family strengths, support growth, and ultimately prevent family maltreatment. Consistent with the research-informed logic model components outlined above, the PFSI is a brief, self-administered inventory that poses questions related to one's perceptions about support from unit leaders, support from and connections with an informal community (e.g., neighbors, co-workers, peers), the quality of various family relationships and interactions, levels of individual fitness (e.g., financial, physical, and psychological fitness), and levels of personal resilience (see Appendix (Fig. 4) for more details related to the PFSI). The PFSI is not conceptualized as a formal diagnostic tool, but rather a conversation starter between practitioners and Airmen to facilitate the identification of strengths and growth opportunities and highlight promising programs and services that could optimally benefit Airmen and their families. The PFSI has received initial (and positive) feedback from Air Force practitioners and stakeholders and is currently in early stages of implementation.

Personal and Family Strengths among Airmen: A Person-Oriented Approach

Although empirical linkages between logic model components and family maltreatment perpetration among active-duty military personnel have been firmly established using variable-oriented approaches (see Bowen et al., 2017 for a systematic review), opportunities to employ person-oriented methods to holistically

examine relevant sets of Airmen's personal and family strengths remain. Whereas variable-oriented approaches estimate the direction and magnitude of an association between an independent variable and a dependent variable, person-oriented methods enable identification of latent patterns across numerous independent variables collectively in a sample, with opportunities to assess associations between pattern membership and dependent variables of interest (e.g., family maltreatment perpetration; Collins & Lanza, 2010). The application of person-oriented methods to identify patterns of strengths among military-connected families has gained traction in the literature (Pflieger et al., 2020; Sullivan et al., 2020).

A holistic view of personal and family strengths among Airmen is warranted on several fronts. From a family systems perspective, individual- and dyad-level dynamics have implications for the functioning of the family system, and features of the family system have implications for individual- and dyad-level functioning (Cox & Paley, 1997). Moreover, a family systems perspective and the social organization theory of action and change highlight that families, as systems, are situated within broader social contexts, such as formal and informal communities (Cox & Paley, 1997; Mancini et al., 2018; Mancini & Bowen, 2013). Associations between family systems, their individual members, and these broader social contexts are reciprocal and transactional (Jensen et al., 2019; Mancini et al., 2018; Mancini & Bowen, 2013). Consequently, dynamics within family system members, the family system as a whole, and the broader social contexts in which a family system is situated are interdependent (Cox & Paley, 1997). In addition to genetic and family-history influences, the nature of such interdependence could yield varying patterns of personal and family strengths among Airmen. Person-oriented methods are well poised to detect varying patterns of personal and family strengths, and to help determine their implications for family maltreatment perpetration. Indeed, certain extant patterns of personal and family strengths among Airmen might signal especially high or low risk of family maltreatment perpetration. Information of this sort could inform the work of USAF practitioners who engage with, assess, and support Airmen and their families.

Understanding correlates of help-seeking intentions among Airmen who are at risk of perpetrating family maltreatment is another important task in the context of family maltreatment prevention. Consequently, we also aim to assess associations between patterns of personal and family strengths and Airmen's intention to seek formal services in the near future—an effort supported by previous research highlighting correlates of help-seeking behavior among active-duty military personnel (Bowen, Jensen, Martin, & Mancini, 2016; Zinzow et al., 2013). This literature suggests that the intention to seek services is plausibly associated with varying patterns of personal and family strengths as laid out in our analytic model.

We noted earlier that we also aim to explore pattern differences with respect to covariates in the form of family context

(e.g., family structure, marital status, age of children), community safety, and socio-demographic characteristics (i.e., gender identity, paygrade, age). Turning to family context, a sizable body of literature highlights the unique dynamics and demands experienced by stepfamilies—families in which one or both adult partners brings a child or children from a previous relationship (Ganong & Coleman, 2017). For instance, stepfamilies often grapple with disagreements between parents and stepparents with respect to parenting strategies, ambiguity around new stepfamily relationships, conflict between resident and non-resident parents, and shifts in relationship quality between parents and their children, among other challenges (Ganong & Coleman, 2017; Jensen, 2017, 2020; Jensen et al., 2014, 2015; Jensen & Howard, 2015; Pace et al., 2015; Papernow, 2018; Shafer et al., 2013). Stepfamilies also yield important opportunities to cultivate meaningful family relationships that transcend biological ties (Papernow, 2013). Consequently, we chose to foreground stepfamily status in our analyses, such that we assessed both (a) whether stepfamily status differed across patterns of personal and family strengths, and (b) whether stepfamily status influenced the magnitude of associations between patterns of personal and family strengths and family maltreatment perpetration or the intention to seek services.

Methods

Data and Sample

Data from the 2011 AF Community Assessment Survey (CAS) were used for the current study. Because the PFSI is a newly developed practice tool and not a formal scientific measure, the CAS was especially helpful in allowing us to carry out the proposed analyses with specific measures that are strongly aligned with the PFSI content and foci. The 2011 iteration (10th) of the CAS was administered between January and April 2011, with respondents representing active-duty members, reservists, Department of Defense civilians, and spouses of active-duty members and reservists. In general, the CAS is used as a community-needs assessment to inform action planning at various levels of the AF (e.g., major command, installations). The 2011 CAS included more than 300 survey items, including questions pertaining mental health, secretive behaviors, resilience, help-seeking attitudes, family and couple relationships, informal networks, and other features of military life. A reference manual generated by Martin and Bowen (2003) contains sources for many of the items and scales used for the current study.

Because the focus of this study was placed on personal and family strengths among active-duty USAF members, our analytic sample was reduced to focus on this subpopulation (response rate of 40% among active-duty members). Beginning with the full sample of active-duty members ($N = 63,290$

participants), we further narrowed our analytical sample to include only those respondents who had at least one child, were in a committed relationship (i.e., they were married, engaged, or involved in a serious relationship), and had non-missing data for indicators of personal and family strengths (< 1.2% of cases had missing data). This particular subset was selected to ensure that respondents were embedded in social contexts in which family maltreatment was even possible—a core focus of the current study. These criteria reduced the final analytical sample to 30,187 participants; 83% of whom identified as male with a modal paygrade of E5-E6 (43%) and a modal age group of 26–35 years (45%). Approximately 21% of respondents indicated that they or their partners had a child or children from a previous relationship (i.e., stepfamily household), and 96% of respondents indicated being married to their partner. No information about racial/ethnic identity was available in the CAS. Additional descriptive information is available in Table 1.

Measures

Substantive measures were selected based on their congruence with the previously developed logic model for family maltreatment prevention among active-duty USAF members and the corresponding PFSI. For each construct summarized below, except for family maltreatment and intention to seek services, measurement models (i.e., confirmatory factor analysis models in a structural equation modeling framework) were estimated to procure latent factor scores. The latent factor scores were then standardized (mean value set to 0 with a standard deviation value of 1) and used as observed indicators in the Latent Profile Analysis (LPA), the details of which are provided in the Data Analysis subsection.

Unit Leader Support Unit leader support ($\alpha = .95$) was measured with four items that asked respondents to indicate the extent to which unit leaders helped new members and families get settled in the community and connected with other members and families, sponsored events and informal activities for members and their families, worked together as a team to support members and their families, and worked with USAF support agencies to address the needs of members and families. Response options ranged from 1 (strongly disagree) to 6 (strongly agree).

Informal Support Dimensions of informal support were measured with three sets of items representing sense of community, neighbor support, and personal network support. Sense of community ($\alpha = .93$) was measured with four items that asked respondents to indicate the extent to which the community showed teamwork and cooperation, felt a sense of common

mission and purpose, felt a collective sense of community, and felt connected to other members and families. Response options ranged from 1 (strongly disagree) to 6 (strongly agree).

Neighbor support ($\alpha = .95$) was measured with four items that asked respondents to indicate the extent to which people in the neighborhood looked out for one another, knew the names of their neighbors, offered help in times of need, and talked to or visited with neighbors. Response options ranged from 1 (strongly disagree) to 6 (strongly agree).

Personal network support ($\alpha = .95$) was measured with four items that asked respondents to indicate the extent to which friends, neighbors, coworkers, or relatives outside their home would provide transportation if needed, lend household tools or equipment, give information about available community agencies and resources, and take care of their children in an emergency. Response options ranged from 1 (almost never) to 6 (almost always).

Safe, Stable, and Nurturing Family (SSNF) Dimensions of SSNF, or family functioning, were measured using four congruous sets of items representing family coping, couple relationship quality, partner support, and parent–child relationship quality. Family coping was measured with four items ($\alpha = .84$) informed by the work of Antonovsky and Sourani (1988): “When my family is going through a rough period, we keep a positive perspective,” “When my family has to cooperate to accomplish something, we work together as a team,” “When my family faces a challenge or difficulty, we confront the problem directly,” and “How often are you successful at managing your family demands?” Response options ranged from 1 (almost never) to 6 (almost always).

Couple relationship quality ($\alpha = .98$) was measured with four items that asked the respondents to indicate how rewarding they found their relationship (range: 1 [not at all] to 7 [absolutely and completely]), how happy they were with their relationship (range: 1 [extremely unhappy] to 8 [could not possibly be any happier]), how satisfied they were with the relationship (range: 1 [not at all] to 7 [absolutely and completely]), and the extent to which the relationship was warm and comfortable (range: 1 [not at all true] to 7 [absolutely and completely true]). These items were conceptually aligned with Norton’s (1983) measure of marital quality.

Partner support ($\alpha = .83$) was measured with three items that asked respondents to indicate the extent to which their partners understood the demands of their USAF job (range: 1 [almost never] to 6 [almost always]), how their partners felt about them making a career of the USAF (range: 1 [extremely unsupportive] to 6 [extremely supportive]), and how supportive their partners were of their work in the USAF (range: 1 [extremely unsupportive] to 6 [extremely supportive]).

Table 1 Latent-Profile Differences

Covariate	Low (10%) (n=3151)		Below Average (26%) (n=7976)		Mixed (16%) (n=4740)		Above Average (36%) (n=10,843)		High (12%) (n=3476)		Class differences, <i>p</i> ≤ .05
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	
Full Sample (N=30,187)											
Family Maltreatment	0.17	0.41 (0.02)	0.21	0.01	0.15	0.01	0.12	0.01	0.10	0.01	1 > 2, 3, 4, 5; 2 > 3, 4, 5; 3 > 4, 5
Family Context											
Stepfamily Structure	0.21	0.28 (0.02)	0.24	0.01	0.22	0.01	0.19	0.01	0.17	0.01	1 > 2, 3, 4, 5; 2 > 4, 5; 3 > 5
Unmarried partner in residence, children	0.02	0.02 (0.00)	0.02	0.00	0.03	0.01	0.02	0.00	0.02	0.01	3 > 4
Unmarried partner not in residence, children	0.02	0.02 (0.00)	0.02	0.00	0.04	0.01	0.02	0.00	0.01	0.00	1 > 2; 5; 3 > 2, 4, 5; 4 > 5
Married, children	0.96	0.96 (0.01)	0.96	0.00	0.93	0.01	0.97	0.00	0.97	0.01	1 > 3; 2 > 3; 4 > 3; 5 > 3
Youngest child is 5 years old or younger	0.60	0.62 (0.02)	0.62	0.01	0.63	0.01	0.63	0.01	0.64	0.01	
Community Safety (Standardized)	0.00	-0.50 (0.06)	-0.19	0.04	-0.12	0.05	0.11	0.03	0.35	0.04	5 > 4, 3, 2, 1; 4 > 3, 2, 1; 3 > 2, 1; 2 > 1
Socio-demographic characteristics											
Female	0.17	0.17 (0.01)	0.12	0.01	0.25	0.01	0.14	0.01	0.13	0.01	1 > 2, 4, 5; 3 > 1, 2, 4, 5
Age											
18-20	0.00	0.01 (0.00)	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	4 > 3
21-25	0.09	0.14 (0.02)	0.12	0.01	0.12	0.01	0.10	0.01	0.13	0.02	1 > 3, 4
26-35	0.45	0.46 (0.02)	0.46	0.02	0.49	0.02	0.47	0.01	0.46	0.02	
36-45	0.40	0.36 (0.02)	0.38	0.02	0.35	0.01	0.36	0.01	0.34	0.02	2 > 5
46-55	0.05	0.03 (0.01)	0.04	0.01	0.05	0.01	0.05	0.01	0.06	0.01	2 > 1; 3 > 1; 4 > 1, 2; 5 > 1, 2
55+	0.00	0.00 (0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paygrade											
E1-E4	0.09	0.17 (0.02)	0.12	0.01	0.14	0.01	0.12	0.01	0.15	0.02	1 > 2, 4; 3 > 4; 5 > 2
E5-E6	0.43	0.53 (0.02)	0.46	0.02	0.47	0.02	0.41	0.02	0.38	0.02	1 > 2, 3, 4, 5; 2 > 4, 5; 3 > 4, 5; 4 > 5
E7-E9	0.21	0.17 (0.01)	0.19	0.02	0.22	0.02	0.19	0.01	0.17	0.01	3 > 1, 2, 4, 5
O1-O3	0.10	0.06 (0.01)	0.09	0.01	0.08	0.01	0.11	0.01	0.11	0.01	2 > 1; 4 > 1, 2, 3; 5 > 1, 2, 3
O4+	0.18	0.08 (0.01)	0.14	0.02	0.10	0.01	0.17	0.02	0.20	0.02	2 > 1, 3; 4 > 1, 2, 3; 5 > 1, 2, 3, 4
Deployed	0.07	0.07 (0.01)	0.07	0.01	0.10	0.01	0.07	0.01	0.07	0.01	3 > 1, 2, 4, 5
Off-Base Residence	0.70	0.69 (0.03)	0.73	0.02	0.72	0.02	0.72	0.02	0.68	0.03	2 > 1, 5; 4 > 1, 5

Note: Means and mean differences were estimated using the 3-step procedure, which accounts for classification uncertainty. Estimates were derived from weighted data and standard errors were adjusted for within-base clustering. Means represent class-specific proportions for binary/dummy variables

Parent–child relationship quality ($\alpha = .75$) was measured with two items that asked respondents to indicate how satisfied they were with parent–child relationships (range: 1 [very dissatisfied] to 6 [very satisfied]) and how much of their time as a parent was enjoyable (range: 1 [almost never] to 6 [almost always]).

Individual Fitness Available measures were selected to represent individual fitness as informed by the recent development of a measure of Comprehensive Airman Fitness (Bowen et al., 2019; Bowen, Jensen, & Martin, 2016a, 2016b). Specifically, individual fitness was measured using three sets of items representing financial fitness, physical fitness, and mental fitness. Financial fitness ($\alpha = .71$) included three items that asked respondents to identify the number of months in the last year they had difficulty paying bills because of a lack of money (continuous response options from 0 to 12), how much difficulty they had paying bills each month (range: 1 [no difficulty at all] to 5 [a great deal of difficulty]), and the extent of difficulty respondents had living on their total current household income (range: 1 [no difficulty at all] to 5 [a great deal of difficulty]). The three items were reverse-coded so that higher values indicated greater financial fitness. Similarly, physical fitness ($\alpha = .77$) was measured with three items that asked respondents to indicate how well they slept (range: 1 [very restless] to 5 [very sound or restful]), their usual level of energy (range: 1 [none] to 5 [very much]), and their overall health during the past four weeks (range: 1 [very poor] to 6 [excellent]). Mental fitness ($\alpha = .84$) was measured with a seven-item version of the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which asked respondents to indicate how many days during the past week they felt that they felt they could not shake the blues, just could not get going, felt sad, had trouble getting to sleep or staying asleep, felt that everything was an effort, felt lonely, and had trouble keeping their mind on what they were doing. Response options ranged from 1 (none) to 4 (5 to 7 days); all items were reverse-coded such that higher values were indicative of greater mental fitness.

Personal Resilience Personal resilience ($\alpha = .92$) was measured with the following six items: “Thanks to my resourcefulness, I know how to handle unforeseen situations,” “I am confident that I could deal effectively with unexpected events,” “I can solve most problems if I invest the necessary effort,” “I can remain calm when facing difficulties because I can rely on my coping abilities,” “If I am in trouble, I can usually think of a solution,” and “I can usually handle whatever comes my way.” Response options ranged from 1 (not at all true) to 4 (exactly true), with higher values indicating higher levels of personal resilience.

Family Maltreatment The 2011 CAS contained a battery of self-report items related to “secretive behaviors,” including behaviors indicative of partner physical abuse, partner emotional abuse, child physical abuse, and child emotional abuse during the past year. Consistent with USAF definitions of family maltreatment, global indicators of each type of maltreatment were created by the survey administrators using the battery of items (e.g., hit, kicked, called names, gaslighted). We then constructed one binary indicator, using this set of pre-existing global indicators, to flag respondents who self-reported any type of maltreatment perpetration (i.e., a value of 1 indicated that any type of family maltreatment took place during the past year, whereas a value of 0 indicated that no family maltreatment took place during the past year). This approach was intended to reflect the fact that (a) different forms of maltreatment are interconnected and (b) USAF leaders are interested in preventing any type of family maltreatment.

Intention to Seek Services Intention to seek services was measured with an item asking respondents to indicate how likely they will be to seek counseling or mental health care services in the next three months. We created a dichotomous variable with responses of “not at all likely” or “somewhat likely” coded as 0, and responses of “very likely” and “absolutely certain” coded as 1.

Covariates Our analyses incorporated a number of covariates that were used to further assess potential latent-profile differences. These variables included stepfamily status (respondent indicated living as a blended family [1], respondent did not indicate living as a blended family [0]), marital status (married [1], not married [0]), the presence of young children in the home (youngest child is 5 years or younger [1], youngest child is older than 5 years [0]), community safety (“How safe are you from crime and violence in your neighborhood?” with response options ranging from 1 [very unsafe] to 6 [very safe]), biological sex (female [1], male [0]), age group (with groups represent ages 18–20, 21–25, 26–35, 36–45, 46–55, and 55 or older), paygrade (E1–E4, E5–E6, E7–E9, O1–O3, and O4 or higher), deployment status (currently deployed [1], not currently deployed [0]), and residence status (off-base residence [1], on-bas residence [0]). The selection of these variables were informed from earlier analyses (Bowen et al., 2017; Jensen & Bowen, 2018).

Data Analysis

As noted earlier, standardized latent construct scores for the following variables were used as observed indicators for the LPA: unit leader support, sense of community, neighbor

support, personal network support, family coping, couple relationship quality, partner support, parent-child relationship quality, financial fitness, physical fitness, mental fitness, and personal resilience. LPA is a form of latent variable modeling that specifies a categorical latent construct as a hypothesized driver of response variation across a set of observed indicators (Collins & Lanza, 2010). As a model-based method, LPA employs probability functions to estimate latent-profile parameters and assign cases to their most likely latent profile, all conditional on case-specific item-response patterns (Kainz et al., 2018). Whereas Latent Class Analysis describes analyses that use binary observed indicators, LPA describes analogous analyses that use continuous observed indicators.

Latent-profile solutions with varying numbers of specified latent profiles were assessed in an effort to identify the optimal or best-fitting solution. The following criteria or indices were examined jointly to evaluate relative fit across solutions: Akaike Information Criterion (AIC; compares competing models with respect to a balance between fit and parsimony), Bayesian Information Criterion (BIC; also compares competing models with respect to a balance between fit and parsimony), adjusted BIC (aBIC; a sample-size adjusted form of BIC), bootstrap likelihood ratio tests (BS LRT; compares relative fit between $k - 1$ and k number of classes), mean posterior probabilities (the average probability of cases being assigned to each latent class, conditional on item response patterns), entropy (a coarse summary of overall classification uncertainty, where higher values [ranging from 0 to 1] indicate greater precision), and substantive interpretability and parsimony (Nylund-Gibson & Masyn, 2016). Together, these criteria or indices helped signal which number of extracted profiles was optimal, particularly by highlighting solutions with relatively high levels of classification precision, accuracy, and distinctness. Following best practices, large sets of random starts were specified during analyses to avoid model estimations derived from local log-likelihood maxima, which can produce anomalous findings (Muthén & Muthén, 2012). Model parameters were corrected for clustering by USAF base location, and an available sampling weight was applied to generate model parameters representative of the active-duty USAF population. LPA was conducted in Mplus 8.4 and all preliminary data management was conducted in Stata 16.0.

After identifying the optimal or best-fitting solution, the three-step procedure as outlined by Asparouhov and Muthén (2014) was used to estimate covariate differences across latent profiles. The three-step procedure is designed to account for classification uncertainty by simultaneously extracting latent profiles, assigning respondents to their most likely profile, and assessing covariate differences across profiles (Asparouhov & Muthén,

2014). Next, logistic regression was used to regress family maltreatment and intention to seek services on latent-profile membership probabilities and covariates. Predicted probabilities for family maltreatment and intention to seek services were estimated for each latent profile by specifying a 100% probability of membership in a particular latent profile (data available from LPA output) and holding all model covariates at sample-mean levels. Thus, the predicted probabilities can be interpreted as the probability of an outcome among an average respondent (with respect to covariates) who also has a 100% probability of membership in a particular latent profile.

Results

Profile Enumeration

Several indices (i.e., AIC, BIC, aBIC, likelihood ratio tests) signaled that more versus fewer latent profiles optimally fit the data; however, several factors indicated that a five-profile solution was optimal. For one, decreases in AIC, BIC, and aBIC began to level off with the five-profile solution, with an equivalent entropy value (.80) relative to adjacent solutions. Second, mean posterior probabilities for each profile in the five-profile solution were valued at .84 or higher. Third and foremost, profile solutions beyond five begun yielding additional profiles with little substantive distinctiveness from other profiles. Taken together, the five-profile solution was selected as optimal. Additional details related to the profile enumeration are available upon request.

Latent Profile Solution

Figure 1 provides a visual depiction of the five-profile solution, for which we applied the following descriptive labels: *low*, *below average*, *mixed*, *above average*, and *high*. Airmen in the *low* pattern (10%) exhibited levels of personal and family strengths well below sample-mean levels, particularly in the areas of family functioning (more than one standard deviation below the sample mean) and physical and mental fitness (more than 1.5 standard deviations below the sample mean). Airmen in the *below average* pattern (26%) exhibited levels of personal and family strengths between sample-mean levels and one standard deviation below sample-mean levels. Airmen in the *mixed* pattern (16%) exhibited varying levels of personal and family strengths, with near- or above-average levels of family functioning, and near- or below-average levels of unit leader support, informal support, individual fitness, and

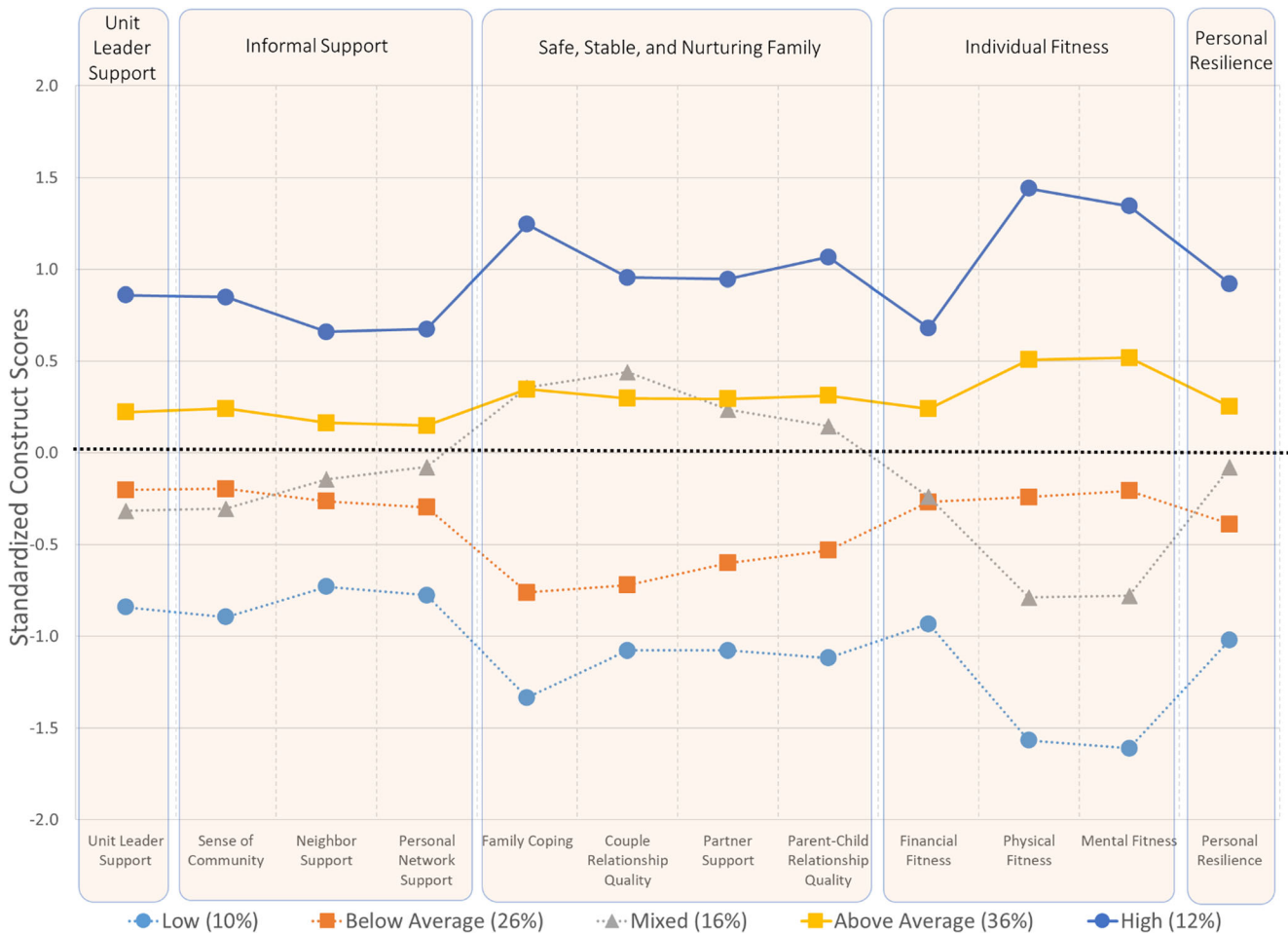


Fig. 1 Visualization of Latent Profiles. *Note:* Values along the y-axis represent standardized construct scores ($M=0$, $SD=1$). The dotted line is included to visually emphasize the location of sample-mean values (i.e., 0.0). Thus, values above the dotted line are above sample-mean levels,

and values below the dotted line are below sample-mean levels. Sample included active-duty members who indicated (a) being in a committed couple relationship and (b) having at least one child

personal resilience. Levels of physical and mental fitness were especially low (nearly one standard deviation below the sample mean) in this profile. Airmen in the *above average* pattern (36%) exhibited levels of personal and family strengths between sample-mean levels and .5 standard deviations above sample-mean levels. Airmen in the *high* pattern (12%) exhibited levels of personal and family strengths that were .5 or more standard deviations above sample-mean levels. Levels of physical and mental fitness were especially high (more than one standard deviation above the sample mean) in this profile.

Associations with Family Maltreatment

As shown in Fig. 2, the predicted probability of family maltreatment perpetration diminished as a function of Airmen possessing a pattern of personal and family

strengths at higher levels (per results shown in Table 1, latent-class differences were all statistically significant except for the difference between *above average* and *high* patterns). Specifically, predicted probabilities of family maltreatment among families not identifying as stepfamilies (i.e., two parents with only children of their own) were 39%, 21%, 14%, 10%, and 8% across *low*, *below average*, *mixed*, *above average*, and *high* patterns, respectively. Among stepfamilies (i.e., one or both parents had a child or children from a previous relationship; about 20% of the sample), predicted probabilities were relatively higher across all profiles, at 49%, 29%, 21%, 15%, and 12% across *low*, *below average*, *mixed*, *above average*, and *high* patterns, respectively. Thus, respondents in stepfamilies had a higher probability of perpetrating family maltreatment across patterns relative to their counterparts in non-stepfamilies.

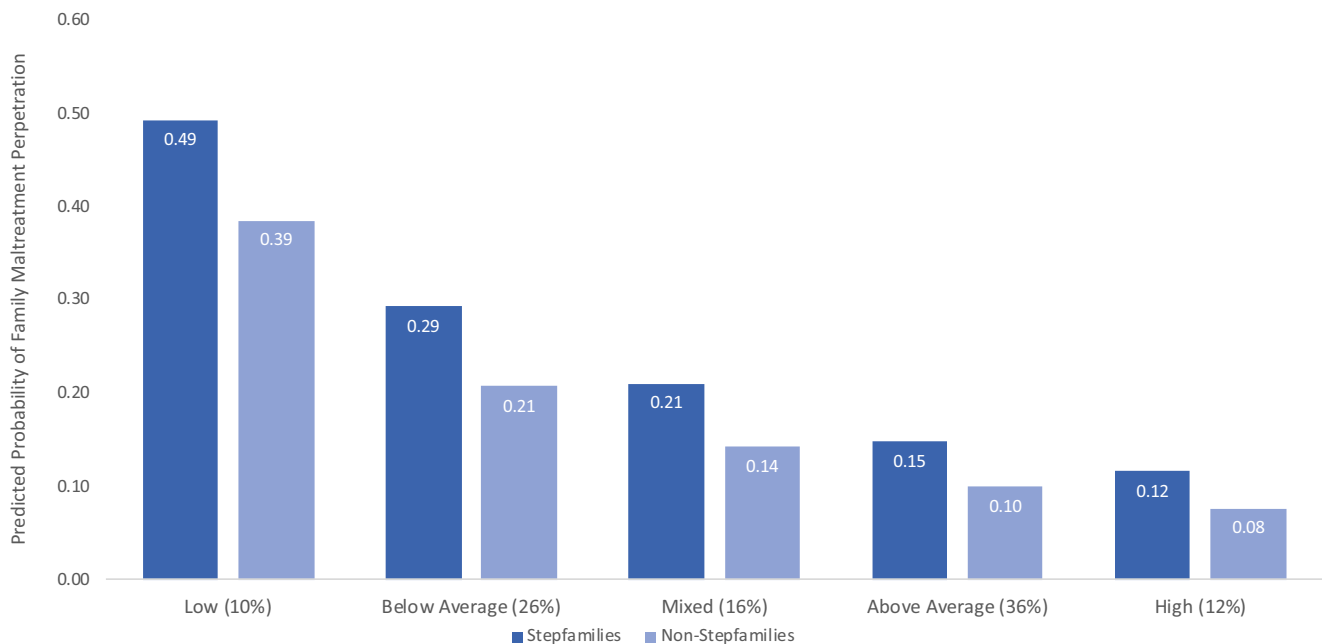


Fig. 2 Predicted Probabilities of Family Maltreatment Perpetration by Latent Profile and Family Structure *Note:* Predicted probabilities of family maltreatment perpetration were estimated using latent-profile probabilities, thus accounting for classification uncertainty (i.e., predicted probabilities for family maltreatment perpetration were estimated for respondents with a 100% posterior probability of being assigned to a particular latent profile). The following covariates were held at sample-mean

levels when estimating predicted probabilities: presence of child 5 years old or younger, sex, age, paygrade, and deployment status. Stepfamilies (19.8% of total sample) were identified via an affirmative response to the following item: “Are you currently living as a blended family? (That is, do you and/or your husband/wife have children from a previous marriage or relationship living with you)?”

Associations with Intention to Seek Services

Fig. 3 displays predicted probabilities of intending to seek services across patterns and with respect to stepfamily status. Not surprisingly, predicted probabilities were very low for respondents in both stepfamilies and non-stepfamilies in the *high* and *above average* patterns (2% or less in all groups). Among non-stepfamilies, predicted probabilities were 20%, 4%, and 7% across *low*, *below average*, and *mixed* patterns, respectively. Among stepfamilies, predicted probabilities were 25%, 6% and 9% across *low*, *below average*, and *mixed* patterns, respectively. Thus, respondents in stepfamilies had a higher probability of intending to seek services across these three patterns relative to their counterparts in non-stepfamilies. For both family structures (stepfamilies and non-stepfamilies), the probability of intending to seek services was most pronounced in the *low* pattern, but still notably low (only as high as 25% among respondents in stepfamilies embedded in the *low* pattern).

Associations with Covariates

Table 1 displays covariate differences across latent profiles. It is worth noting that the relatively large number

of cases associated with each latent profile yielded statistically significant covariate differences, even when differences were not especially large in magnitude. Thus, we highlight covariate differences of notable magnitude, and suggest readers review Table 1 for more details. In terms of family context, stepfamilies, which comprised 17% of the full sample, were significantly over-represented in the *low* (28% of Airmen in this pattern were in stepfamilies) and *below average* (21% of Airmen in this pattern were in stepfamilies) patterns of personal and family strengths. In addition, a slightly lower proportion of Airmen in the *mixed* pattern (93%) were married relative to the other patterns (96–97%).

Interestingly, levels of perceived community safety differed significantly across all five latent profiles. Specifically, standardized levels of perceived community safety were $-.50$, $-.19$, $-.12$, $.11$, and $.35$ for the *low*, *below average*, *mixed*, *above average*, and *high* patterns, respectively. Thus, Airmen embedded in patterns marked by relatively higher levels of personal and family strengths also appeared to be embedded in relatively safer communities.

Turning to socio-demographic characteristics, results yielded some significant latent-profile differences. For one, female Airmen were notably over-represented in

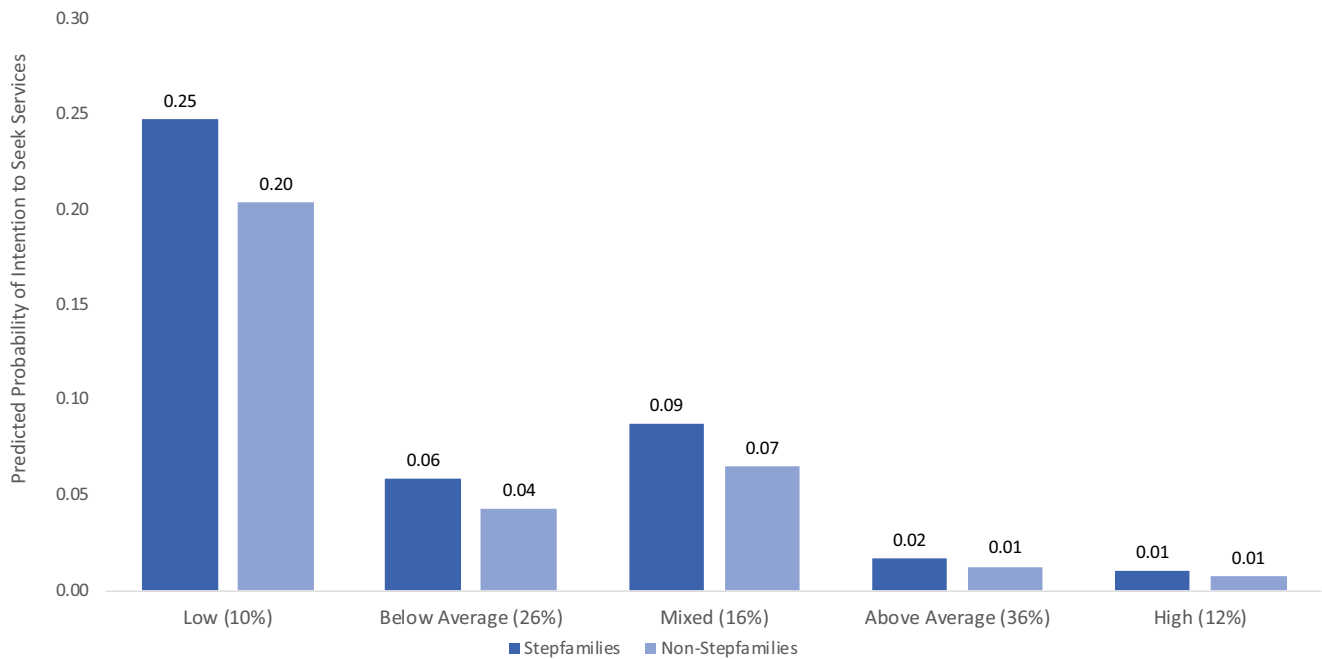


Fig. 3 Predicted Probabilities of Intention to Seek Services (Absolutely Certain or Very Likely) by Latent Profile and Family Structure *Note:* Predicted probabilities of intention to seek services were estimated using latent-profile probabilities, thus accounting for classification uncertainty (i.e., predicted probabilities for intention to seek services were estimated for respondents with a 100% posterior probability of being assigned to a particular latent profile). The following covariates were held

at sample-mean levels when estimating predicted probabilities: presence of child 5 years old or younger, sex, age, paygrade, and deployment status. Stepfamilies (19.8% of total sample) were identified via an affirmative response to the following item: “Are you currently living as a blended family? (That is, do you and/or your husband/wife have children from a previous marriage or relationship living with you)?”

the *mixed* pattern (25% of Airmen in this pattern were female, versus 17% of the full sample being female). Airmen who reported being currently deployed were also over-represented in the *mixed* pattern (10% of Airmen in this pattern were currently deployed, versus 7% of the full sample). There were also some notable latent-profile differences with respect to paygrade. Deviations from sample-mean paygrade levels were most pronounced in the *low* pattern, wherein lower paygrades (i.e., E1-E6) were over-represented and higher paygrades (i.e., O1-O4 or higher) were under-represented. Although off-base residence was significantly less prominent among Airmen in the *low* and *high* patterns relative to the other patterns, actual differences were quite low in magnitude (percentages ranged from 68% to 73% across the patterns).

Discussion

The purpose of the current study was to analyze secondary data from a large, representative sample of Airmen to (a) identify latent profiles of personal and family strengths, (b) assess whether latent-profile membership

was associated with self-reported family maltreatment perpetration, and (c) assess whether pattern membership was associated with the intention to seek formal services. We also examined potential latent-profile differences with respect to covariates in the form of family context, community safety, and socio-demographic characteristics. These efforts were intended to generate evidence around the utility of a holistic assessment tool, the PFSI, that USAF maltreatment-prevention practitioners can use to discuss with Airmen a host of factors empirically associated with the probability of family maltreatment perpetration.

Foremost, our results suggest that Airmen can experience widely varying sets of personal and family strengths. Suboptimal patterns of personal and family strengths may appear more often among Airmen in stepfamilies, lower paygrades, and communities perceived as unsafe. These findings appear congruent with existing literature and theory. As noted earlier, stepfamilies can experience unique demands that may compromise family functioning, individual well-being, and the cultivation of informal and formal support (Ganong & Coleman, 2017; Jensen, 2017; Jensen et al., 2014, 2015; Jensen & Howard, 2015; Pace

et al., 2015; Papernow, 2018; Shafer et al., 2013)—dimensions captured in the latent profiles identified in this study. To the extent that paygrade serves as a proxy for socioeconomic status (i.e., a construct representing income, rights, and privileges), having a lower paygrade could yield higher levels of economic stress among Airmen and their families. Higher levels of economic stress have been linked to lower levels of individual well-being, family functioning, and social support (Conger et al., 2010; Gjesfjeld et al., 2010). Consistent with the environmental-stress model, unsafe community environments can exert stress on parenting and family processes, prompt families to isolate themselves socially, and compromise individual well-being (Bowen et al., 2000; Brodsky, 1996; Noah, 2015; Riina et al., 2016). Future research should clarify the mechanisms by which elements of family structure, socioeconomic position, and community safety are associated with patterns of personal and family strengths among Airmen.

It is also interesting to observe that across four of the five patterns identified, levels of each personal and family strength were fairly uniform. This suggests that if Airmen are struggling in one area, they are likely struggling in other areas. On the other hand, if Airmen are doing well in one area, they are likely doing well in other areas. This general finding is congruent with a family systems perspective and the social organization theory of action and change—specifically the notion that individuals, the family systems of which they are part, and the broader social contexts of family systems are interdependent and transactional (Cox & Paley, 1997; Mancini et al., 2018; Mancini & Bowen, 2013).

The *mixed* pattern deviated the most from the trend of uniformity in levels across personal and family strengths. The *mixed* pattern was marked by near-average levels of strengths with exception of mental and physical fitness, which neared one-standard deviation below sample-mean levels. Thus, Airmen embedded in the *mixed* pattern might struggle primarily with mental and physical health. Our results indicated that female respondents and respondents who indicated being currently deployed were both over-represented in the *mixed* pattern. This suggests that currently deployed Airmen might be more likely to perceive having compromised mental and physical health relative to their counterparts who are not currently deployed, all while reporting near-average levels of family functioning, informal support, and unit leader support. Female Airmen being over-represented in the *mixed* pattern could reflect military women's disproportionate experiences of sexual harassment and sexual assault

compared to male peers—experiences that have been found to negatively affect both mental and physical wellness (Maguen et al., 2012; Suris & Lind, 2008). Women's overrepresentation in the *mixed* pattern group may also be a product of gender differences that have been observed in military populations with respect to the expression and experience of mental health concerns (e.g., Hourani et al., 2015). This observation warrants further empirical investigation.

Our findings also highlight important associations between patterns of personal and family strengths and key family outcomes, such as family maltreatment perpetration. Indeed, patterns marked by increasingly low levels of personal and family strengths were associated with increasing probabilities of self-reported family maltreatment perpetration among Airmen, especially those in stepfamilies. Although the probability of family maltreatment perpetration was non-zero across all identified patterns of personal and family strengths, the difference in probability between those embedded in the *high* pattern versus those embedded in the *low* pattern was substantial (8% versus 39%, respectively, among Airmen in non-stepfamilies; 12% versus 49%, respectively, among Airmen in stepfamilies).

Our findings also have implications for help-seeking intentions among Airmen. Suboptimal help-seeking behaviors among military-connected individuals has been well documented, with several posited causes (Bowen, Jensen, Martin, & Mancini, 2016; Hom et al., 2017; Michalopoulou et al., 2017; Zinzow et al., 2013). Our findings call attention to a potentially troubling issue, namely that the probability of intending to seek services in the near future did not rise above 9% for any of the observed patterns of personal and family strengths other than the *low* pattern. Although a low probability of intending to seek services seems unproblematic in the context of the *high* and *above average* patterns, even in the *low* pattern, only 25% of Airmen in stepfamilies and 20% of Airmen in non-stepfamilies indicated they were very likely or absolutely certain to seek services in the next three months. Importantly, the intention to seek services does not guarantee the actual behavior of seeking services, and the number of people who actually seek services is likely lower than those who indicate intent to do so (Jaccard & Levitz, 2016).

Practical Implications

Overall, our findings support a practice of USAF practitioners offering holistic assessments of personal and family

strengths as a means to engage, support, and connect at-risk Airmen and their families with targeted resources (e.g., Prevention & Relationship Enhancement Program, Love & Logic, Active Parenting for Teens, Dads: The Basics, Anger Management, and more recently, Strength at Home – Couples). The PFSI, which is designed to attend to these strengths, can well position USAF practitioners to engage Airmen in conversations around strengths and growth opportunities for the purposes of maltreatment-prevention service planning. As mentioned earlier, it is quite notable that the identified patterns exhibit similar levels across all strength areas, with the exception of the *mixed* pattern. That is, many Airmen in this sample appear to experience a fairly uniform level, whether low or high, of strengths across a host of personal and family domains. This suggests that some Airmen, particularly those with *low* or *below average* patterns, might benefit from a diverse set of services that address growth opportunities across multiple intrapersonal and interpersonal areas. Packaging multiple services might be especially impactful for Airmen in step-families. Moreover, given the apparent value in holistically assessing various personal and family strengths, it could be useful to apply this holistic perspective when evaluating family maltreatment prevention services' efficacy; that is, program evaluation efforts could assess whether particular programs bolster multiple areas of personal and family strengths, either intentionally or inadvertently. Our findings related to patterns of personal and family strengths and help-seeking intentions suggest that ongoing outreach efforts are warranted in order to increase Airmen's awareness of and motivation to use available resources. Efforts on this front could include (a) addressing practical barriers to help-seeking and (b) mitigating perceived stigma associated with help-seeking (Jensen & Bowen, 2020). Such efforts should also prioritize Airmen reporting or exhibiting important growth opportunities across numerous intrapersonal and interpersonal domains (i.e., *low* pattern).

From a practical standpoint, our findings highlight a very positive observation: a sizable proportion of Airmen in this sample appear to be faring well. Indeed, 48% of Airmen in this representative sample reported *high* or *above average* patterns of personal and family strengths. Given the relatively low risk of family maltreatment perpetration associated with these patterns, our findings suggest that a large number of Airmen are mission ready from a personal and family strengths perspective, as evidenced by high levels of personal resilience and individual fitness; being well connected to peers, co-workers, neighbors, and unit

leaders; and being embedded in families that are functioning optimally.

Limitations and Future Research

Our study findings, and their implications, should be interpreted in the context of some study limitations. First, data used were cross-sectional. As a result, firm conclusions are untenable with respect to the temporal order of associations between patterns of personal and family strengths and outcomes such as family maltreatment. For instance, just as patterns of personal and family strengths might lead to family maltreatment, family maltreatment might produce particular patterns of personal and family strengths. Longitudinal studies could elucidate the temporal order of key variables. The absence of data related to active-duty members' racial/ethnic identity also limited our ability to assess potential nuances in our analyses with respect to racialized groups.

Another limitation is this study's broad examination of family maltreatment. That is, our measure of family maltreatment was inclusive, such that it captured information about both partner and child maltreatment. Consequently, we cannot draw firm conclusions about whether patterns of personal and family strengths are most closely associated with partner maltreatment versus child maltreatment. Although this approach could be pursued in future research, we should note that our current approach was intended to align with USAF efforts to prevent all forms of family maltreatment among Airmen. Thus, beginning with a broad view of family maltreatment was arguably appropriate; however, we did conduct supplemental analyses whereby we assessed bivariate associations between latent-profile membership and each core type of maltreatment (child and partner). Findings highlighted a similar pattern to those we found when assessing a global measure of family treatment. Specifically, rates of child maltreatment and partner maltreatment decreased significantly when moving from the *low* pattern to the *high* pattern (18% to 9% for child maltreatment [$\chi^2(4) = 171.44, p < .001$] and 25% to 1% for partner maltreatment [$\chi^2(4) = 0.01, p < .001$]). Limitations notwithstanding, our findings expand holistic understanding of the personal and family contexts in which family maltreatment perpetration and help-seeking intentions might be more or less likely among Airmen.

Appendix



PFSI | Personal and Family Strengths Inventory

Personal and Family Strengths Inventory (PFSI)

The PFSI is a brief inventory that allows you to "take stock" of strengths and growth opportunities in your life, which can promote wellness and mission readiness. The PFSI is sponsored by the U.S. Air Force Family Advocacy Program and can serve as a conversation starter should you desire any support from a Family Advocacy Program representative.

Please indicate the extent to which each statement reflects your experience during the last month (0 = Not at All, 10 = Completely). Family Environment items cover several possible family relationships and roles. If a certain relationship or role does not apply to you, simply skip those items.

Unit Leader/Work Supervisor Support		Not at All	Completely
<i>Special Instructions: If you are a civilian partner, please respond to these four items with your partner's unit (or workplace) in mind:</i>			
1	Leaders ¹ (or supervisors) in my/my partner's unit (or workplace) sponsor social events and informal activities for families.	0	1 2 3 4 5 6 7 8 9 10
2	Leaders (or supervisors) in my/my partner's unit (or workplace) help new members and families get settled in the community and connected with families.	0	1 2 3 4 5 6 7 8 9 10
3	Leaders (or supervisors) in my/my partner's unit (or workplace) work together as a team to support families.	0	1 2 3 4 5 6 7 8 9 10
4	Leaders (or supervisors) in my/my partner's unit (or workplace) work with military support agencies to address the needs of families.	0	1 2 3 4 5 6 7 8 9 10
Informal Support		Not at All	Completely
5	People in my community ³ know each other's names.	0	1 2 3 4 5 6 7 8 9 10
6	People in my community look out for one another.	0	1 2 3 4 5 6 7 8 9 10
7	People in my community offer help or assistance to one another in times of need.	0	1 2 3 4 5 6 7 8 9 10
8	People in my community talk to or visit with each other.	0	1 2 3 4 5 6 7 8 9 10
Family Environment		Not at All	Completely
<i>Family</i>			
9	My family ⁴ can calmly discuss problems.	0	1 2 3 4 5 6 7 8 9 10
10	My family functions consistently well.	0	1 2 3 4 5 6 7 8 9 10
11	My family is supportive of each member.	0	1 2 3 4 5 6 7 8 9 10
<i>Couple Relationship (if applicable)</i>			
12	My partner and I respect one another.	0	1 2 3 4 5 6 7 8 9 10
13	My partner and I manage well under pressure.	0	1 2 3 4 5 6 7 8 9 10
14	My partner and I feel loved and cared for by one another.	0	1 2 3 4 5 6 7 8 9 10

¹ The Personal and Family Strengths Inventory was developed by Todd M. Jensen, PhD and Gary L. Bowen, PhD in the School of Social Work at the University of North Carolina at Chapel Hill, in partnership with the U.S. Air Force Family Advocacy Program (AFMOA/SGHW) and with support from a subaward through Kansas State University (Grant #2013-39575-37343).
² Unit-level leaders include squadron and flight commanders and first sergeants or similar unit-level leaders in the Army, Navy, and Marine Corps.
³ Community refers to the neighborhood or area in which you reside.
⁴ First consider those with whom you live. If you do not currently live with family, think about whoever you consider to be family.

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Parenting with Current Partner (if applicable)		Not at All	Completely
15	My partner and I work together to overcome challenges in parenting.	0	1 2 3 4 5 6 7 8 9 10
16	My partner and I agree on how to parent our child(ren).	0	1 2 3 4 5 6 7 8 9 10
17	My partner and I share responsibility for the care and nurturance of our child(ren).	0	1 2 3 4 5 6 7 8 9 10
18	My partner works with me to solve problems specific to our child(ren).	0	1 2 3 4 5 6 7 8 9 10
19	My partner supports my parenting efforts.	0	1 2 3 4 5 6 7 8 9 10
Co-Parenting (if applicable)		Not at All	Completely
20	The other parent and I work together to overcome challenges in co-parenting.	0	1 2 3 4 5 6 7 8 9 10
21	The other parent and I agree on how to co-parent our child(ren).	0	1 2 3 4 5 6 7 8 9 10
22	The other parent and I share responsibility for the care and nurturance of our child(ren).	0	1 2 3 4 5 6 7 8 9 10
23	The other parent works with me to solve problems specific to our child(ren).	0	1 2 3 4 5 6 7 8 9 10
24	The other parent supports my parenting efforts.	0	1 2 3 4 5 6 7 8 9 10
My Parenting at Home (if applicable)		Not at All	Completely
25	I place reasonable expectations on my child(ren).	0	1 2 3 4 5 6 7 8 9 10
26	I respond consistently to my child(ren), regardless of my mood.	0	1 2 3 4 5 6 7 8 9 10
27	I am warm and affectionate with my child(ren).	0	1 2 3 4 5 6 7 8 9 10
28	I enjoy being a parent.	0	1 2 3 4 5 6 7 8 9 10
29	I successfully manage the responsibilities of parenthood	0	1 2 3 4 5 6 7 8 9 10
30	I take pride in the job that I am doing as a parent.	0	1 2 3 4 5 6 7 8 9 10
Individual Fitness		Not at All	Completely
<i>Mental Fitness</i>			
31	I look forward to beginning each day.	0	1 2 3 4 5 6 7 8 9 10
32	I keep a positive outlook on life.	0	1 2 3 4 5 6 7 8 9 10
33	I enjoy most days.	0	1 2 3 4 5 6 7 8 9 10
<i>Physical Fitness</i>			
34	I maintain a healthy diet. ⁵	0	1 2 3 4 5 6 7 8 9 10
35	I exercise on a regular basis. ⁶	0	1 2 3 4 5 6 7 8 9 10
36	I obtain adequate sleep. ⁷	0	1 2 3 4 5 6 7 8 9 10
<i>Social Fitness</i>			
<i>Special Instructions: If you are a civilian partner, please respond to the third item with your partner's unit (or workplace) in mind:</i>			
37	I can depend on support from one or more extended family members, if I need it.	0	1 2 3 4 5 6 7 8 9 10
38	I can depend on support from one or more friends, if I need it.	0	1 2 3 4 5 6 7 8 9 10
39	I can depend on support from one or more members of my/my partner's unit (or workplace), if I need it.	0	1 2 3 4 5 6 7 8 9 10

⁵ Co-parenting refers to situations in which you share parenting responsibilities with another individual who is not a current partner or spouse.
⁶ The Centers for Disease Control and Prevention note that a healthy eating plan (a) emphasizes fruits, vegetables, whole grains, and free or low-fat milk and milk products; (b) includes lean meats, poultry, fish, beans, eggs, and nuts; (c) is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars; and (d) stays within your daily calorie needs.
⁷ The Centers for Disease Control and Prevention define minimum regular exercise as 150 minutes of moderate intensity aerobic activity, as well as muscle-strengthening activities two or more times per week.
⁸ The Centers for Disease Control and Prevention recommend 7 or more hours of sleep per night for adults age 18 and older.

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Spiritual Fitness		Not at All	Completely
40	I have a guiding set of principles or beliefs.	0	1 2 3 4 5 6 7 8 9 10
41	I attempt to live in accordance with a guiding set of principles or beliefs.	0	1 2 3 4 5 6 7 8 9 10
42	I draw strength from a set of guiding principles or beliefs.	0	1 2 3 4 5 6 7 8 9 10
Financial Fitness		Not at All	Completely
43	I am confident that I will have enough money to pay my bills over the next six months.	0	1 2 3 4 5 6 7 8 9 10
44	I am confident that I will be able to set money aside for savings over the next six months.	0	1 2 3 4 5 6 7 8 9 10
45	I am confident that I will have money available in case of an emergency over the next six months.	0	1 2 3 4 5 6 7 8 9 10
Help-Seeking Orientation		Not at All	Completely
<i>Special Instructions: If you are a civilian partner, please respond to the second item with your partner's unit (or workplace) in mind:</i>			
46	I am willing to turn to people in my community for help or assistance, when needed.	0	1 2 3 4 5 6 7 8 9 10
47	I am willing to turn to leaders (or supervisors) in my/my partner's unit (or workplace) for help or assistance, when needed.	0	1 2 3 4 5 6 7 8 9 10
48	I am willing to turn to support agencies and organizations for help or assistance, when needed.	0	1 2 3 4 5 6 7 8 9 10
Personal Resilience		Not at All	Completely
49	I am confident that I could deal effectively with unexpected events.	0	1 2 3 4 5 6 7 8 9 10
50	I know how to handle unforeseen situations, thanks to my resourcefulness.	0	1 2 3 4 5 6 7 8 9 10
51	I can solve most problems if I invest the necessary effort.	0	1 2 3 4 5 6 7 8 9 10
52	I can remain calm when facing difficulties because I can rely on my coping abilities.	0	1 2 3 4 5 6 7 8 9 10
53	I can usually think of a solution if I am in trouble.	0	1 2 3 4 5 6 7 8 9 10
54	I can usually handle whatever comes my way.	0	1 2 3 4 5 6 7 8 9 10

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Fig. 4 Personal and Family Strengths Inventory

Acknowledgments This research was supported with a subaward through Kansas State University (Grant # 2017-39575-27343) from the U.S. Air Force Family Advocacy Program (AFMOA/SGHW). The views expressed are those of the author(s) and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.

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