

Prospective Multifactorial Analysis of Canadian Forces Basic Training Attrition

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ABSTRACT The aim of this prospective study was to identify key predictors of attrition from Canadian Forces basic training. Baseline health data from 5,169 Canadian Forces recruits (85.4% men) collected using the Recruit Health Questionnaire were linked with administrative data on basic training releases. A total of 8.0% of recruits from this sample was released from basic training. A wide range of factors falling within each of the following categories were examined as potential predictors of attrition: demographic characteristics, social environment, health status, lifestyle, and personality. Logistic regression analyses pointed to increased odds of attrition among noncommissioned member candidates, recruits with one or more dependents, as well as those with an annual household income of less than \$20,000, poor/fair self-rated health, medium/high severity of somatic symptoms, higher neuroticism, lower mastery, and higher agreeableness. Overall, results underscored the importance of good general health and resilient personality to basic training success.

INTRODUCTION

In recent years, there has been increased concern over early attrition in the Canadian Forces (CF). Indeed, there is evidence that the rate of attrition among noncommissioned members (NCMs) with less than one year of service has been growing (i.e., new recruits).¹ Along with the fact that considerable resources are spent by military organizations on the training of new recruits, these findings reinforce the value of research aimed at illuminating the factors associated with early attrition in CF recruits. One particular area of interest is the identification of factors associated with attrition from basic military training.

Given that such information is often more readily available through administrative records, several previous studies have focused on the demographic and health characteristics associated with basic training attrition.² For example, basic training attrition has been found to vary as a function of demographic variables such as age, race, and sex.² Also, in light of the heavy

physical and psychological demands placed by basic training on recruits,³ it is not surprising that factors such as shortness of breath, poor general health, activity limitations excessive body mass, and injuries have been associated with basic training attrition in military organizations worldwide.^{2,4-9} Finally, various facets of mental health, including mood, psychiatric symptoms, and depression, have been identified as potential factors contributing to basic training attrition.⁹⁻¹²

Notwithstanding the importance of health to basic training success, emphasis on its predictive value for basic training outcomes should not overshadow the potential influence of other factors. For instance, lifestyle factors, such as smoking or physical inactivity, have been associated with an increased risk of basic training attrition in the U.S. and Swedish military.^{2,5,9} Although to a lesser degree, results of some other studies have suggested that certain characteristics of recruits' social environment (i.e., exposure to trauma) are associated with basic training attrition.^{5,13} Taking another approach, other researchers argue that individual personality plays a role in basic training outcomes.¹⁴⁻¹⁶

In light of the wide range of factors found to predict basic training outcomes in previous research, it is clearly important that the issue be examined from a multifactorial perspective. Yet, only a handful of studies have examined a wide spectrum of the different types of factors that may predict basic training attrition.^{4,5,17} To complicate matters, results of these studies have pointed to varying factors as key predictors. For instance, Larson et al¹⁷ identified mental health indices (e.g., depression, anxiety, and misconduct) as the top predictors of basic training attrition among U.S. Navy recruits, whereas Canada and her colleagues⁵ identified racial background and various measures of health status as key predictors of attrition from the U.S. Army basic training. These findings thus emphasize how factors of importance may differ from one context to the next.

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OBJECTIVE

Because commands are unified in the CF structure, the basic training course provides all recruits with the common core skills and knowledge necessary to perform their military duties, and precedes any command-specific training. Conducted at the Canadian Forces Leadership and Recruit School (CFLRS), the course is aimed at developing the military state of mind and behavior, the mental and physical endurance, and the combat skills necessary for the profession of arms.¹⁸ The duration is 14 weeks for NCM candidates and 15 weeks for Officer candidates. To date, it remains unclear whether a set of factors similar to those examined in previous studies may be used to predict attrition from basic training in the CF context. Several potentially relevant factors are routinely assessed in the CF recruit population using the Recruit Health Questionnaire (RHQ). More specifically, variables include a wide range of demographic, social environmental, lifestyle, health, and personality factors that have been theoretically and/or empirically associated with attrition from basic training. The aim of the present study was to examine the relationships of these factors with basic training attrition in the CF. Data collected using the RHQ were linked with administrative data on basic training outcomes and subjected to a prospective multifactorial analysis.

METHOD

Participants

The sample was drawn from the population of CF recruits who participated in the RHQ between July 2003 and December 2005. Because of incomplete and/or inaccurate information, the sample included 5,169 CF recruits (88% NCM, 12% Officer candidates), representing 74% of all RHQ participants and approximately 65% of all recruits who attended the CFLRS for basic training during this time. A complete breakdown of the proportion of participants within demographic groupings is presented in Table I. Based on available data, the breakdown by sex was similar to that of the recruit population (which was approximately 86% male). However, the sample included a lower proportion of Officer candidates (which was approximately 23% in the recruit population).

Procedure

The RHQ is a paper and pencil tool administered to CF recruits in group sessions in the early weeks of basic training. Recruits are provided with a consent form to read and sign. They are informed that responses may be linked with medical or personnel data for research purposes. The study protocol was approved by the Defence Research and Development Canada Human Research Ethics Committee.

Measures

A wide range of factors within the broader factor domains of (i) demographic, (ii) social environmental, (iii) lifestyle, (iv)

TABLE I. Demographic Profile of Respondents

Demographic Variable	% (N = 5,169)
Age (Years)	
17–19	22.5
20–24	41.4
25–29	21.0
30–34	8.9
35–39	3.8
40–44	1.8
45–50	0.6
Dependents	
No	76.7
Yes	23.3
Education	
Some Secondary	13.4
Completed Secondary	35.8
Some Community College/CEGEP	13.5
Completed Community College/CEGEP	17.7
Some University Courses	6.5
Completed University Degree	11.2
Postgraduate Studies	1.9
Household Income	
Less Than 20,000\$	20.0
20,000\$–49,999\$	30.8
50,000\$–99,999\$	24.4
100,000\$ or More	10.0
Do Not Know	14.7
Language	
English	70.4
French	29.6
Marital Status	
Married/Living with Partner	27.4
Single/Other (Divorced, Separated, Widowed)	72.6
Rank	
NCM Candidates	88.0
Officer Candidates	12.0
Sex	
Male	85.4
Female	14.6

Note: A CEGEP is a postsecondary education institution exclusive to the province of Quebec, which provides a program that is a requirement for entry to university.

health, and (v) personality factors were selected from the RHQ for inclusion in the analyses. Items used to measure these factors in the RHQ were selected in part because of their demonstrated validity in previous studies. All scales have been found to be reliable in the CF recruit population (Cronbach’s alphas near or above 0.70).

Demographic Background

Potential demographic predictors included age group, dependents (having none or at least one dependent), education level, income, language (having English or French as a first official language), marital status, rank (NCM candidate or Officer candidate), and sex.

Social Environment

Social environmental factors included indices of childhood adversity (six items from the Recruit Assessment Program

[RAP] tool^{19,20}), childhood neglect (two items from the RAP tool^{19,20}), exposure to violence (seven items reflecting lifetime exposure to different violent events adapted from the RAP tool), life events (50-item checklist based on the work of McCreary and Sadava²¹), and social support (19-item Social Support Survey developed by Sherbourne and Stewart²²).

Lifestyle

Major lifestyle factors were examined, such as physical activity (based on the measure used in the Canadian Community Health Survey [CCHS]^{23,24}), fruit and vegetable consumption (measure drawn from the CCHS²³⁻²⁴), smoking status, and alcohol use (one item drawn from the CCHS to assess frequency of alcohol use in the past year²³).

Health

Health was assessed in terms of health professional (HP) consultations in the past year, body mass index classification (based on established World Health Organization cut off values^{25,26}), self-reported health (based on one item from the CCHS²³), and injuries (whether a repetitive strain injury [RSI] and/or acute injury was sustained in the past year). Health was also assessed in terms of the following mental health indicators: depression, panic disorder, other anxiety disorder, and somatic symptoms (self-reported Patient Health Questionnaire screening tool²⁷), as well as post-traumatic stress disorder (PTSD) (17-item PTSD Checklist-Civilian Version²⁸).

Personality

Several aspects of personality were assessed. This includes alexithymia, which is characterized by a difficulty describing feelings, difficulty identifying feelings, and externally-oriented thinking. It was measured by the 20-item Toronto Alexithymia Scale.²⁹ This also includes the Big Five personality traits of agreeableness (i.e., the tendency to be pleasant and accommodating in social situations), conscientiousness (i.e., having a dependable and careful nature while completing tasks), extroversion (i.e., the tendency to be expressive and energetic), neuroticism (i.e., a proneness for general emotional instability), and openness (i.e., the tendency to seek out and accept novel experiences). These were assessed by a 40-item version of the Big Five Inventory adapted for the CF population.^{30,31}

Additional personality traits that were examined include hardiness (i.e., the tendency to have a high sense of commitment, strong sense of control, and to be open to change, assessed using an 11-item scale adapted from Bartone's 15-item hardiness scale^{31,33}), mastery (i.e., the degree that individuals have a sense of control over their life circumstances, assessed using a 7-item scale drawn from the CCHS^{23,24,34}), optimism (i.e., the degree to which respondents have a positive or optimistic outlook on life, assessed with the Revised Life Orientation Test³⁵), personal need for structure (i.e., the preference for structure and clarity, measured using a 12-item scale^{31,36}), positive and negative affect (i.e., the tendency to

experience positive and negative feelings or emotions, assessed with the Positive and Negative Affect Schedule³⁷), and self-esteem (assessed using a measure drawn from the CCHS that was based on the Rosenberg self-esteem scale.^{23,24,38}

Basic Training Outcomes

Administrative data collected by the CFLRS were obtained on whether or not recruits were released from basic training.

Analyses

Analyses were carried out using SPSS 17.0 (Release 17.0.0, August 23, 2008). In preparation for the final analysis, data were screened for missing values, accuracy, uneven splits, and outliers.³⁹ Some missing values were identified. A missing value analysis revealed that data were not missing completely at random. Under such circumstances, imputation of missing data is not recommended. Therefore, cases with missing data were subjected to listwise deletion.

Because only 44.7% of cases from the entire sample had complete data across all variables, it was necessary to limit the number of variables to include in the multifactorial model by selecting them a priori. For this purpose, five separate multiple logistic regression analyses were performed in an initial step to identify the strongest predictors of basic training attrition among the set of variables representing each domain of factors listed above. Variables identified as significant predictors in these analyses were included in the final multiple logistic regression analysis. Backward stepwise deletion based on Wald's statistic was applied to refine and simplify the model to only key predictors.

RESULTS

Descriptive Analyses

The proportion of CF recruits who were released from basic training in this sample was 8.0%. Recruits were released as early as in week 2, although the number of releases only peaked at 4 weeks (22% of them occurred in week 4, 31% occurred by week 4). Among those who were released, more than half (54%) left training by 7 weeks, whereas 75% left training by 12 weeks. Details on the proportions of different types of releases are presented in Table II for the study sample and for recruits who were not in the study sample (i.e., nonrespondents), based on available data. Given that the sample represents 65% of the recruit population, the possibility of nonresponse bias must be acknowledged. Therefore, proportions or means presented in this report should not be interpreted as CF recruit population estimates. However, it is notable that comparable attrition rates have been reported elsewhere among recruits who were on the basic training list or subsidized university training list within the same time frame as recruits in the sample (i.e., ranging from approximately 6% to 8% among NCMs and from 8% to 14% among Officers, the majority of whom were on the basic training list rather than the subsidized university training list).¹

TABLE II. Frequency and Proportion of Basic Training Release Types

Type of Release	Study Sample		Nonrespondents	
	Frequency	%	Frequency	%
On Request—Other Causes	331	80.5	317	89.0
Not Advantageously Employable	57	13.9	24	6.7
Other (e.g., Fraudulent Statement on Enrolment, Irregular Enrolment, On Medical Grounds, Unsuitable for Further Service)	23	5.6	15	4.2
Total Releases/Total Cases	411/5,169	8/100	356/2,135	16.7/100

TABLE III. Descriptive Statistics of Potential Predictors of Basic Training Attrition

Predictor	
Social Environmental Factors	
Social Support	Mean = 79.3, SD = 16.7
Childhood Adversity (None)	30.1%
Life Events (<4)	51.3%
Exposure to Violence (None)	32.8%
Childhood Neglect (Lower)	55.3%
Lifestyle Factors	
Physical activity	
Inactive	19.6%
Moderately Active	19.6%
Active	60.8%
Smoking	
Never	56.6%
Ex-smoker	19.4%
Current Smoker	23.9%
Frequency of Alcohol Use	
Never	6.0%
2–3 Times Per Year	15.8%
Monthly	9.5%
2–3 Times Per Month	24.3%
Weekly	19.6%
2–3 Times Per Week	19.0%
4–6 Times Per Week	4.9%
Daily	0.9%
Fruit/Vegetable Consumption	
Insufficient	29.3%
5–10 Daily Servings	46.1%
10+ Daily Servings	24.6%
Health	
Acute Injury (None)	87.1%
RSI (None)	93.2%
Body Mass Index	
Normal	55.8%
Overweight	35.9%
Obese	8.3%
Sleep Problems	
Never	53.2%
Sometimes	39.4%
Most of the Time	7.4%
Self-rated Health	
Excellent	19.5%
Very Good	47.4%
Good	29.8%

TABLE III. Continued

Predictor	
Poor/Fair	3.3%
Somatic Symptoms	
Minimal	69.7%
Low	26.1%
Medium/High	4.2%
HP Consultation General (None)	55.3%
HP Consultation for Emotional Problem (None)	96.4%
Depression Identified As Cause (No)	99.3%
Anxiety Identified As Cause (No)	99.3%
Positive Screen PTSD (No)	95.3%
Positive Screen Panic Disorder (No)	99.2%
Positive Screen Other Anxiety Disorder (No)	99.1%
Depression Symptoms	
Mild	82.3%
Moderate	13.2%
Moderately Severe/Severe	4.5%
Personality Factors	
Agreeableness	Mean = 34.9, SD = 4.3
Conscientiousness	Mean = 34.2, SD = 4.7
Extroversion	Mean = 27.6, SD = 5.2
Neuroticism	Mean = 20.2, SD = 5.1
Openness	Mean = 23.7, SD = 3.0
Personal Need for Structure	Mean = 36.0, SD = 6.2
Dispositional Optimism	Mean = 21.1, SD = 3.9
Positive Affect	Mean = 39.5, SD = 5.2
Negative Affect	Mean = 21.6, SD = 7.2
Self-esteem	Mean = 19.9, SD = 3.6
Mastery	Mean = 20.3, SD = 4.6
Hardiness	Mean = 33.8, SD = 5.3
Difficulty Identifying Feelings	Mean = 14.1, SD = 5.8
Difficulty Describing Feelings	Mean = 12.9, SD = 4.5
Externally Oriented Thinking	Mean = 20.4, SD = 4.3

With the exception of demographic variables (the descriptive results of which are presented in Table I), descriptive statistics of all variables examined as predictors of basic training attrition are presented in Table III.

Predicting Basic Training Attrition

Variables selected for inclusion in the final multiple logistic regression analysis were rank, language, dependents, income, social support, life events, somatic symptoms, self-rated health, depression, agreeableness, neuroticism, and mastery. Backward stepwise deletion based on Wald’s statistic led to the removal of language, social support, life events, and depression from the model. Results of the final model are presented in Table IV.

A test of the final model against a constant-only model demonstrated that predictors significantly predicted attrition, with $\chi^2(14) = 163.62, p < 0.001$. An analysis of the Receiver Operating Characteristic curve revealed a c-statistic of 0.7 ($p < 0.001$), also suggesting that the model significantly predicted attrition. The analysis yielded a Nagelkerke R^2 of 0.10,

TABLE IV. Summary of Results of Final Adjusted Model Predicting Basic Training Attrition

Predictor (Reference Category)	β	SE β	Wald	p	OR (CI)
Constant	-3.04	0.78	15.35	<0.001	0.05
Rank (NCM Candidate)	-1.27	0.35	13.38	<0.001	0.28 (0.14–0.56)
Dependents (None)	0.34	0.14	5.81	0.016	1.40 (1.07–1.84)
Income (< 20K)			11.87	0.018	
20–49K	-0.35	0.16	4.61	0.032	0.71 (0.52–0.97)
50–99K	-0.61	0.19	10.70	0.001	0.54 (0.38–0.78)
100K or More	-0.44	0.25	3.06	0.080	0.64 (0.39–1.05)
Do Not Know	-0.39	0.20	3.77	0.052	0.68 (0.45–1.00)
Self-Rated Health (Excellent)			9.95	0.019	
Very Good	-0.16	0.19	0.72	0.395	0.85 (0.59–1.23)
Good	-0.03	0.20	0.03	0.875	0.97 (0.66–1.43)
Poor/Fair	0.62	0.29	4.65	0.031	1.85 (1.06–3.25)
Somatic Symptoms (Minimal)			13.65	0.001	
Low	0.23	0.14	2.72	0.099	1.26 (0.96–1.67)
Medium/High	0.84	0.23	13.42	<0.001	2.31 (1.48–3.61)
Neuroticism	0.04	0.01	8.63	0.003	1.04 (1.01–1.07)
Mastery	-0.07	0.02	20.01	<0.001	0.94 (0.91–0.96)
Agreeableness	0.04	0.02	5.42	0.020	1.04 (1.01–1.07)
Test			χ^2	p	
Overall Model Evaluation					
Likelihood Ratio Test			163.62	<0.001	
Goodness-of-Fit Test					
Hosmer–Lemeshow			14.43	0.07	

OR, odds ratio; CI, confidence interval; K, one thousand dollars.

pointing to a small effect size. This statistic provides an index of the strength of association for the model that approximates, but is not analogous to the proportion of variance explained by the model.³⁹

Results suggested that Officer candidates had about one-third (0.28) of the odds of NCM candidates to be released from basic training, and recruits having an annual household income of between \$20,000 and \$99,000 had lower odds of being released than those having an annual household income of less than \$20,000. Also, compared to recruits with no dependents, those with one or more demonstrated 1.4 times the odds of being released.

Recruits with poor to fair self-rated health, or with a medium to high severity of somatic symptoms, demonstrated about twice (1.85 and 2.31, respectively) the odds of being released from basic training of those with excellent self-rated health or a minimal severity of somatic symptoms, respectively.

With regards to personality factors, results demonstrated that for every 1-point increase in score on the scales assessing neuroticism and agreeableness, recruits had 1.04 times (or 4% increase in) the odds of being released from basic training. However, for every 1-point increase in score on the scale assessing mastery, they had 0.94 times (or a 6% decrease in) the odds.

DISCUSSION

The aim of the present study was to improve understanding of the factors associated with basic training attrition in the CF. Results demonstrated that demographic, health status, and

personality factors contributed to the prediction of basic training outcomes, while the importance of social environmental and lifestyle factors to such outcomes was less pronounced.

Recruits who were released from basic training were more likely to be NCM candidates, to have dependents, and to have had an annual household income of less than \$20,000 before basic training. In contrast with previous findings,² however, age and sex were not found to be associated with basic training attrition. In past research, recruits of lower socio-economic status (SES) have demonstrated poorer results on a wide range of performance measures in their career.⁴⁰ One possible explanation is that familial demands combined with more limited financial resources conflicted with the amount of time spent away from home and energy required for basic training among individuals with a greater number of dependents and lower household income. It is well documented that individuals of lower SES experience a greater number of environmental and social stressors.⁴¹ Consequently, they may be in a disadvantaged position to face some of the additional challenges inherent to basic training.

Contrary to previous findings^{2,5,13} adverse childhood events, tobacco use, and physical inactivity did not emerge as significant predictors of basic training attrition. Other than SES-related factors, important predictors of basic training attrition were self-rated health and somatic symptoms rather than body mass or previous injuries, as in past studies.^{4–9} Self-rated health represents a global measure of health that taps into all factors considered by the individual to reflect health. Also, the scale used to assess somatic symptoms was designed

with the original intent of assessing medically unexplained symptoms and has been found to have good predictive validity for psychological distress.⁴² Results, thus, pointed to the importance of health as a broader construct comprising both physical and psychological dimensions rather than more specific physical aspects of health.

In further support of the importance of psychological factors to basic training outcomes, some personality traits were associated with attrition from basic training. More specifically, recruits who obtained higher scores on the neuroticism scale demonstrated an increase in the odds of attrition. By contrast, recruits who obtained a higher score on mastery demonstrated lower odds of basic training attrition. These results are in line with the literature on psychological resilience, which stipulates that certain personal attributes, including the tendency to have a strong sense of control over one's life circumstances, facilitate the extent to which individuals thrive when faced with challenging situations.⁴³⁻⁴⁵

Agreeableness is generally considered to be associated with positive outcomes, such as more adaptive social interactions and coping responses.³¹ However, it was found to be associated with an increase in the odds of basic training attrition. Previous work on the relationship between agreeableness and various criteria for work performance has also pointed to mixed findings.⁴⁶ It is, thus, possible that agreeableness is helpful in some contexts, but detrimental in others.

In addition to potential reporting bias, which may have resulted from the self-report nature of the study and the fact that questionnaires were not anonymous, some limitations may have contributed to the fact that certain factors (e.g., childhood adversity and neglect, physical aspects of health, lifestyle) were less important predictors of basic training outcomes. First, results may have resulted from a ceiling effect, with a general tendency for CF recruits to demonstrate optimal physical health and lifestyle.⁴⁷ Thus, the impacts of physical health and lifestyle factors may not yet have manifested themselves in this population. Second, some of the measures used to assess these factors were less comprehensive and/or specific than those used in previous studies. For instance, recruits simply reported whether or not they had sustained an acute injury or RSI in the previous year, whereas participants in a previous study² also reported whether or not their recovery from this injury was complete. Third, many of these studies focused exclusively on one or a limited range of factors.^{2,7,13} It, therefore, remains unclear whether similar observations would have been made if these studies had accounted for the contribution of other factors to basic training outcomes.

Implications

Attrition from basic training places a financial strain on the military budget, as the costs of recruitment, food, accommodations, training, wages, and medical care are not recoverable once recruits are out of the system.² By emphasizing the importance of psychological health and personality, the pres-

ent findings are particularly relevant for recruit selection and training policies aimed at minimizing basic training attrition.

The observed importance of psychological and personality factors to basic training success could be seen as pointing to the value of implementing psychological and personality screening in CF recruiting procedures. Personality testing is already applied with success as part of routine in-service personnel selection and screening procedures for some CF occupations/employment areas. However, the use of psychological or personality tests for the purposes of military recruiting remains the subject of great debate.⁴⁸ Instead, Jones et al⁴⁸ argued in favour of using psychological surveillance to identify certain factors that might act as "red flags" for potential basic training attrition. This approach might also point to certain desirable personal attributes, such as mastery, which might buffer the impact of individual risk factors on basic training attrition.

Mastery refers to a cognitive style (or way of thinking) characterized by the belief that one's life chances are primarily under the control of his or her own ability and hard work.³⁴ The concept is strongly tied to psychological resiliency, which reflects the notion that certain personality characteristics enable individuals to achieve better health outcomes despite the challenges they may face. Although personality traits are often regarded as relatively stable over the life course, there is growing debate as to whether certain traits, which reflect patterns of attitudes and skills (e.g., hardiness, mastery, optimism), can be learned.

A seminal study by Khoshaba and Maddi⁴⁹ demonstrated that workers who thrived, despite having faced adversity in the workplace and during childhood, reported having had parents who modeled supportive relationships and encouragement, suggesting that hardiness is learned rather than inborn. Consequently, they developed a training program to enhance hardiness, which has shown promise in educational and occupational settings.⁵⁰ In addition, there is evidence that leaders who demonstrate hardiness can influence subordinates to think and act in more resilient manners.⁵¹ One approach to reduce basic training attrition may be to incorporate resilience training or mentorships into the training curriculum by integrating exercises similar to those included in the hardiness training program.⁵⁰ In fact, basic training presents unique opportunities for this type of training, as the typically younger age of recruits render this group more malleable to developing the necessary skills for optimal coping with stress throughout their career.⁵² Psychological and personality assessment of "red flags" could inform the extent to which such training is necessary across recruit cohorts.

Study Strengths and Limitations

In addition to previously discussed limitations, it must be noted that results of the present study may not generalize to all members of the CF recruit population. The overall proportion of recruits who were released from basic training within the study sample differed from that of nonrespondents, pointing to potential nonresponse bias. Still, results emphasize the

importance of considering a wider range of factors as predictors of basic training attrition than has typically been the case in the literature.

Another limitation is that data were collected over 5 years ago. Since this time, CF recruiting policy has undergone tremendous change. In October 2006, the physical fitness test was eliminated as a recruiting requirement, and an in-house program was implemented at the CFLRS to help candidates who do not initially reach the minimum standard to achieve acceptable fitness. Physical health and lifestyle factors may, thus, prove to be more important predictors of basic training attrition among recruits who attended basic training after this change was implemented. There are plans to carry out similar analyses on RHQ data collected after October 2006 to determine whether this might be the case.

Finally, based on the measure of strength of association, prediction of basic training attrition from the model was limited. This finding underlines the problem of relying solely on background factors, such as those investigated here, to predict basic training outcomes. Several other, more proximal factors (e.g., adaptability to military culture, family emergencies, training injuries) may influence whether or not individuals release from basic training, and qualitative research on this issue is perhaps better suited to shed light onto areas that need further investigation. Despite these limitations, notable strengths of the present study include the prospective study design and use of different data sources. Also, the collection of baseline data in the first few weeks of basic training, before any formal examination or evaluation, helped to ensure that recruits' responses were not biased by basic training performance.

Conclusions

Overall, findings underscore the benefits of a multifactorial approach in analyses predicting basic training outcomes. Basic training is a critical time for the development and training of soldiers, but it also represents a time of considerable stress.⁵³ This may in part account for the fact that psychological and personality factors were among the strongest predictors of basic training attrition among CF recruits. Such findings highlight the potential value of incorporating resilience training into the CF recruit training curriculum. They also emphasize the fact that the processes underlying basic training attrition are complex. The current study primarily focused on baseline health-related indicators as distal factors involved in the process of attrition from basic training. Examining the role of more proximal factors and developing an integrated framework to characterize the processes involved in basic training outcomes represent fruitful directions to take in future research.

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