Original Article

Personal Hygiene among Bangladesh Air Force personnel of Zahurul Haque Base, Chattogram, Bangladesh

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Abstract

Introduction: *Personal hygiene is essential to the current paradigm shift towards predictive, preventive, and personalized medicine, which enables the prediction and prevention of infectious disease outbreaks and members of military forces may be at high risk for contracting contagious diseases.* ***Objective:*** *This study was conducted to evaluate the personal hygiene practices among Air Force personnel aiming at providing a basis for preventive and predictive medical interventions and to make future efforts improve target interventions for young people.* ***Materials and Methods:*** *The study was conducted using a cross-sectional design. A validated self-administered questionnaire that related personal hygiene practices were used to obtain quantitative data from 362 male Air Force personnel working at Zahurul Haque Air Force Base, Chattogram, Bangladesh. The resulting data were analyzed with SPSS, version 23.* ***Results:*** *Mean (±SD) age of the 362 participants was 32.19±9.14 years with a range of 18 to 52 years. More than 95% of the participants reported regular practice of most of the manners of personal hygiene. Hygiene practice correlated with the rank and education, but not with other socio-demographic characteristics.* ***Conclusions:*** *Almost the entire group reported to practice good hygiene suggesting that such behaviors are generally recognized by military personnel.*

Key words: Air Force personnel, Personal hygiene, Bangladesh

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Introduction

Personal hygiene refers to maintaining cleanliness of one's body and clothing to preserve overall health and well-being. It includes a number of different activities related to the following general areas of self-care: washing or bathing, including cleansing oneself after using the toilet; taking proper care of the mouth; grooming and dressing and keeping clothing clean[1]. In short hygiene refers to the set of practices linked to the conservation of health and healthy living[2,3].

It involves practices and conditions that help to maintain health and prevent the spread of diseases as well as practices that deal with the preservation of health[4]. Personal hygiene in a straight-line aid in disease prevention and health promotion[5,6]. Hygienic practices are prejudiced by social, familial and individual factors as well as the individual's knowledge and attitudes towards hygiene[7].

The United Nation's Sustainable Development Goal of good health and well-being has been embraced globally as a result of its aim of reducing mortality[8]. The potential of achieving this goal requires a paradigm shift from the traditional approach to disease prevention and treatment and education. The quest for innovative and advanced health care has provided the paradigm change from delayed interventions to predictive medicine tailored to the person from reactive to preventive medicine and from disease to wellness[9].

A key component for the success of any predictive and preventive measure will include a behavioral analysis of current happenings within a given population. Hygiene behaviors and practices among a given population will thus provide a great deal of insight towards the predictive and preventive medicine process[10]. Prevention of infectious diseases has become one of the daunting challenges of entire world specially in developing countries of the world in varying degrees including Bangladesh being no exception[11].

People who work and live in the crowded areas may be at particularly high risk for poor hygienic behaviors[12]. Military settings are a prime example of such a high-risk population as military personnel live and work closely together in performing their duties as soldiers[13]. The results of a number of

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studies indicate that behaviors such as regular brushing of teeth, respiratory etiquette and hand-washing receive little attention among army personnel[14,15]. Therefore, this population can be exposed to conditions that facilitate the transmission of infectious diseases. The aim of this study was to assess the behaviors of Air Force personnel of Bangladesh with regard to their personal hygiene.

Materials and Methods

The study was conducted in the Zahurul Haque Air Force Base, Chattogram, Bangladesh. The participants were recruited as a sample of convenience. Inclusion criteria were voluntary participation and at least 1 year of service experience. A total of 400 questionnaires were distributed across the participants and 362 completed questionnaires were returned (response rate 90.5%).

A validated self-administered scale was used to assess personal hygiene behaviors considered to be particularly important for preventing infectious diseases. It contains items on 11 main areas of personal hygiene that are recommended by the World Health Organization and UK Department of Health[16,17] which includes oral hygiene, bathing, hand washing, hair care, nail care, foot care, wearing clean clothes, respiratory hygiene, attention to body odor, eye care and ear care.

Respondents were asked to choose from one of four options ranging from 0 (never) to 3 (always) for each item. The total score is arrived at by summing the scores of all 19 items and ranges from 0 to 57. Higher scores indicate better personal hygiene behaviors. We also assessed such demographic characteristics as age, marital status, number of children, educational level, background diseases and sources of information about personal hygiene.

Prior to data collection, respondents' verbal consent was sought. Respondents were informed about the purpose of the study and were made to understand that participation was voluntary and refusal to participate in the study would not affect their employment status. The study respondents were assured of confidentiality and informed that they were at liberty not to answer any question they did not want to. All respondents were advised that completing the survey implied informed consent to use the data for research purposes. In addition, all personal identifiers were removed in the summary data to ensure confidentiality.

Data were entered into a spreadsheet and later exported to SPSS version 23 and coded for analysis. The analysis included both descriptive and inferential statistics. Descriptive statistics (frequencies, means and standard deviations) were used to describe the variables of interest. Mean differences were tested for statistical significance either by Student's t test and F test (ANOVA). All statistical tests were two tailed and p=0.05 or less was considered statistically significant.

Results

The mean age of the participants was 32.19±9.14 years with a range of 18 to 52 years. Majority of them were Muslims (92.8%), married (66.6%), reside in barrack/mess (63%), had college level education (45.3%) and service length of ≤10 years (47.5%) [Table-I].

Table-I: Socio-demographic characteristics of respondents (n=362)

Category & Variable (unit)	Frequency (percentage)
Age (years)	
≤30	185 (51.1)
>30	177 (48.9)
Mean±SD	32.19±9.14
Range	18-52
Religion	
Muslim	336 (92.8)
Others	26 (7.2)
Living accommodation	
House	134 (37.0)
Barracks/mess	228 (63.0)
Marital status	
Unmarried	121 (33.4)
Married	241 (66.6)
Service length	
≤10 years	182 (47.5)
11-20 years	95 (26.2)
>20 years	95 (26.2)
Number of children (n=241)	
≤2	209 (86.7)
>2	32 (13.3)

Data were expressed as frequency (percentage) if not otherwise mentioned.

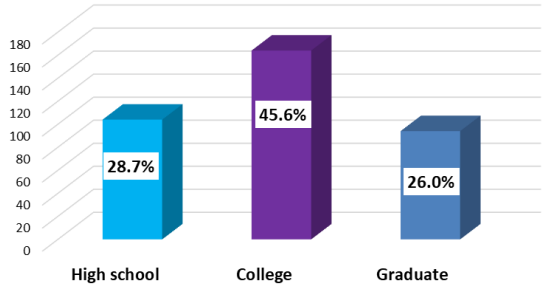

Figure-1: Educational characteristics of the respondents

Among the respondents' high school qualification was 28.7% where the graduate was 26% (Figure-1). Table-II presents respondents' hygiene practices in relation to the various questions that were asked.

From the table-II, it can be observed that face wash, hand washing before meal and after using toilet, changing underwear, were the highest and best hygiene practice items. Among the respondents' JCO was 25.4%, sergeant was 22.1% and LAC was 32.9% (Figure-2).

Table-II: Personal hygiene practices of the respondents (n=362)

No.	Item Description	Never /Sometimes	Often /Always
1	Wash face at least 3 times a day	1 (0.3)	361 (99.7)
2	Brush teeth after breakfast and after dinner	9 (2.5)	353 (87.5)
3	Shower at least once a day	19 (5.2)	343 (94.8)
4	Use soap or shampoo when showering	18 (5.1)	344 (94.9)
5	Comb hair at least once a day	29 (8.0)	333 (92.0)
6	Cut nails at least once a week	19 (5.2)	343 (94.8)
7	Avoid using personal hygienic belongings of other (Ex. toothbrush, comb)	17 (4.7)	345 (95.3)
8	Use personal glass and dish	77 (21.3)	285 (78.7)
9	Wash hands for at least 20 s with soap and water before each meal	5 (1.4)	357 (98.6)
10	Wash hands for at least 20 s with soap and water after using the toilet	3 (0.8)	359 (99.2)
11	Have shower after physical activities or sports that resulted in sweating	6 (1.7)	356 (98.3)
12	Change underclothes at least once a day	5 (1.4)	357 (98.6)
13	Wash feet at least once a day	9 (2.5)	353 (87.5)
14	Wear clean work clothes every day	30 (8.3)	332 (91.7)
15	Use a perfume or cologne every day	97 (26.8)	265 (73.2)
16	Stay at least 1–2 m away from a person with the signs of a cold or flu	18 (5.0)	344 (94.9)
17	Cover nose and mouth with while sneezing	5 (1.4)	357 (98.6)
18	Avoid touching mouth and eyes with unclean hands	16 (4.4)	346 (95.6)
19	Clean ears at least once a week	23 (6.4)	339 (93.6)

Table-III: Relationship between hygiene practice, gender and residences

Category & Variable (unit)	Mean±SD	p value
Age (years)		
≤30	53.05±5.58	0.134*
>30	52.27±4.20	
Rank		
JCO	51.78±5.00	0.043†
Sergeant	52.89±4.04	
CPL	53.95±5.06	
LAC	52.45±5.32	
Education		
High school	53.46±4.77	0.022†
College	52.82±5.18	
Graduate	51.54±4.62	
Service length		
≤10 years	52.88±5.83	0.746†
11-20 years	52.54±4.07	
>20 years	52.43±4.02	
Marital status		
Unmarried	52.81±5.36	0.707*
Married	52.60±4.77	

* p values were derived from Student's t test
† p value was derived from ANOVA test

Table-III shows the correlation between hygiene practice and socio-economic variables. From the table-III it can be observed that hygiene practice correlated with rank and education of the participants. No correlation was observed between hygiene practice and age (years), service length and marital status.

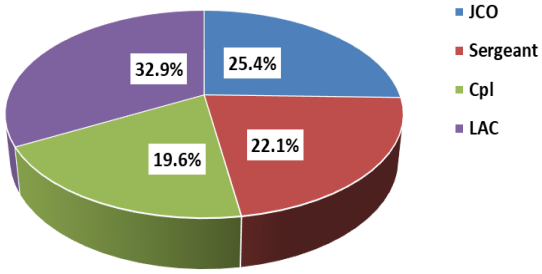

Figure-2: Rank structure of the respondents

Discussion

The study evaluated personal hygiene practices among Air Force Personnel posted at Zahurul Haque Air Force Base, Chattogram, Bangladesh aiming at providing a basis for preventive medical intervention with a goal of making future effort to improve target interventions for such persons. Self-assessment of hygiene behavior and life styles is not only an important determinant of the generation of accurate disease burden estimates among target populations but also is critical towards preventive and predictive medicine[18,19].

Personal hygiene practice is affected by many factors which are the developmental level, cultural background, socioeconomic status, personal habits and health status[20,21]. In this study, we found that a significant number of respondents engaged in good hygiene practice for all the described activities (Table-II). Basic personal hygiene refers to the principle of maintaining cleanliness and grooming of the external body. It includes practices like bathing regularly, washing hands whenever necessary, trimming finger and toe nails, wearing washed clothes daily, washing the hair, keeping hair clean from lice and dandruff, brushing the teeth and caring for the gums[22]. This according to WHO is the basis for good personal hygiene[23]. The personal hygiene practices that appeared to be generally strong among study participants included washing hands after using the toilet (99.7%), washing hands before eating (99.7%) and covering mouth and nose during sneezing (98.6%). Hygiene practice among these group of air force personnel were found to be better than overall general population of Bangladesh[19].

Overall, respondents in the study reported good levels of personal hygiene behaviors suggesting that such behaviors are generally recognized by military personnel as being important. These results suggest that ongoing educational programs are needed to reinforce the need for military personnel to perform behaviors to maintain their personal hygiene. The need for such an educational approach is supported by the results of other studies in which some researchers report poor hygienic conditions among military personnel that increase their risk of contracting disease[24,25]. Two other studies suggest that negative attitudes regarding various personal hygiene behaviors such as hand washing are widespread among soldiers[26,27].

Little hygiene-related research has focused on military personnel making it difficult to compare the results of our study with those of comparable studies in other populations. Nevertheless, our findings underscore the need for a better understanding of hygienic behaviors in military troops or other occupational fields. Similar research could be conducted in other high-risk populations such as healthcare professionals, food handlers or workers in difficult occupations such as miners or farmers. Assessing such groups using our scale could provide a rationale for developing a program that addresses issues related to the hygiene and self-care for these special groups in order to improve the health of the whole community.

The study utilized a cross-sectional design which may present difficulties in ascertaining the direction of causality between the variables analyzed. Therefore, caution needs to be taken in the interpretation of the findings with regard to causality. The study might be vulnerable to reporting bias, response bias and selection bias. However, the authors do not think that this would be a big problem in the study because of the standardized questionnaire used.

Conclusion

In conclusion, our survey of personal hygiene behaviors among air force personnel demonstrated that significant numbers of them are engaged in good hygiene practice for all the described activities. We also observed that hygiene practices were associated with service rank and educational status of the respondent. Personal hygiene behavior of military and other closed populations are needed to monitor behaviors that are likely to prevent the spread of infectious and other diseases. Assessment tools with solid psychometric properties are needed.

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