Original Research Paper

Time Taken For Upper Body Dressing in Young Normal Adults

Medical Science

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ABSTRACT   *Aim: To find the normal time taken for upper body dressing. **Objective:** To establish the time taken for upper body dressing and to identify factors influencing the time taken for upper body dressing. **Method:** This is a descriptive study which was done using convenient sampling of 150 young males and females in the age range of 18 to 30. During this study, the duration of dressing performance was timed. Factors influencing the time taken for dressing were assessed. **Result:** Descriptive statistics were used to reveal significant differences between the time taken to wear different garments. These tests showed that wearing a full sleeve shirt took maximum time in donning which was 38.62 seconds. Out of these factors (number of buttons, direction of buttoning, handedness, age, height and weight), only number of buttons significantly influenced the time taken to don the garment. As a final outcome, we concluded that the average of 15.3 seconds is required for buttoning of two buttons and travel time of limbs in sleeve. **Conclusion:** Our findings establish the average time required in donning common upper body garments, and thus it may serve as base line information for assessing patients with limitations.*

1. INTRODUCTION

According to Arubayi (2010), "Dressing is an act of putting on clothes and usually a means of expressing our individuality". As dressing has evolved and undergone many transitions over different era, it has continued to generate more concerns for man. One of these is Time.

Mulley (cited in Walker, 1991) stated that everybody irrespective of the condition wishes to be independent in dressing. It is degrading to have to be dressed by someone else, dressing independently gives stroke patients a sense of dignity, self - respect and achievement. This explains why dressing is an area of interest for occupational therapists whose goal is achieving independence in activities of daily living (ADL).The common attires for upper body dressing are shirt, T-shirt, jacket, pull-overs, kurta, blouse etc. The gross movements required for wearing these attires could be more or less similar, but the fine motor demands in wearing a shirt (buttoning and unbuttoning) can make it more time consuming. More than dressing, time spent in dressing is also of paramount importance as it can influence other ADL, both in disease and normal conditions, as stated by Suzuki et al (2006). Hence establishing an average time required in dressing will be important as a crucial marker of normalcy.

Many aspects of dressing such as fashion, culture, and pattern in disability have been well researched. However, the time component still remains unexplored. (Maharaj's 2006) assertion also attests to this, stating that it is of concern that there are no well researched randomized control trials establishing norms for time spent for different patterns of dressing although estimations for time and patterns are made for individuals with impairments. Thus this study attempts to examine quality of upper body dressing in relation to the average time taken and factors influencing the time taken.

1.1 Need for Study
• Establishing baseline data on the average time taken by a normal individual in dressing the upper body can provide a better insight to the degree of functional limitation and the progress of intervention in any disenabling condition affecting dressing.

• A normative data will help in documentation and better communication with patient as well as other health care providers.

1.2 Research question:
1. What is the impact of a person's hand dominance, age group and buttoning pattern related to time used by an individual in upper body dressing?
2. What are the possible reasons which will lead to excess time required for upper body dressing?

2. METHODOLOGY
2.1 Design
Descriptive Study: The data collection was done through observation and recording the time taken for upper body dressing.

2.2 Subjects recruitment:
A total of 150 healthy subjects, 100 male and 50 females participated in study. The study subjects were mostly student and staff working in various institutions of Manipal University.

2.3 Sample method
Convenient sampling was used - the subjects were recruited based on their willingness to participate.

2.4 Sample Size Estimation
A pilot study was conducted on 15 subjects. The standard deviation was 10.1, precision of 2 sec. and confidence level of 95% for the male population, the minimum sample size required was 98. Standard deviation for female was 2.1; precision of 1 sec., confidence level of 95% and minimum sample size required was 35.

2.5 Subject selection criteria
Inclusion Criteria: Young, healthy adults including both male and female between age range of 18-30 years.

Exclusion Criteria: Any medical history indicating neurological, musculoskeletal, cognitive or perceptual dysfunction.

2.6 Tools used:
- Weighing scale,
- Stopwatch,
- Stadiometer

2.7 Ethical consideration:
The consent form was filled by every individual subject and confidentiality was maintained.

The study was approved by the Institutional Ethics Committee, Manipal College of Allied Health Sciences, Manipal University, Manipal.

2.8 Procedure
Persons between the ages 18 to 30 years were approached and were requested to bring their own comfortable full sleeve shirt, half sleeve shirt, T shirt and kurta respectively to the evaluation room.

The evaluation room for data collection was kept constant throughout the study as the environment would influence the performance of participants.

The subjects were requested to dress as they would normally do in their daily routine and time was recorded using stopwatch.

2.9 Data Analysis:
The data was managed on an excel spread sheet and was analysed using Statistical Package for Social Science (SPSS16). The descriptive statistics was used to summarize the data and t- test was used to find out the significance between the groups. The level of significance set at <0.05.

RESULTS
Subject characteristics:
Total number of subject n=150, 100 male and 50 female. The average age of males are 22.0±2.6 years with range 18-30 years and 21.25±2.6 years for female with range 18-28 years. Out of 100 males 94 were right hand dominant and 4 were left hand dominant, and all 50 female were right hand dominant.

Time spent by male population for wearing full sleeve shirt is 38.62±9.40 sec. (23.91-83.36); half sleeve shirt is 22.80±3.10 sec. (15.42-31.85) and T- shirt 12.2 ±3.00 sec. (7.94-24.73). Female wear their Kurta in 17.00 ± 3.40 sec (11.00-28.34).

The difference in time consumption for wearing full sleeve shirt , half sleeve shirt and T-Shirt by male population, with respect to age range of 18-23 years and 24 -30 years. For 18 – 23 years age group the mean time consumption for full sleeve shirt is 40.34±8.81 sec, for half sleeve is 23.19± 2.83 sec and for T- Shirt is 11.94±2.53 sec, whereas for 24 -30 year age group mean time consumption for full sleeve shirt is 36.84±9.89 sec, for half sleeve 22.39± 3.40 sec and for T- Shirt 12.5±3.58 sec. The t and p value for full sleeve shirt (t=1.868 and p=0.065), half sleeve shirt (t=1.259 and p=0.211) and T-shirt (t=-0.905 and p=0.368).

The difference in time consumption by females for wearing Kurta with respect to age range 18-23 years and 24 -30 years which is 16.55±2.81 sec and 17.75±4.29 sec respectively. The t and p value for females wearing Kurta is t= -1.103 and p= 0.270.

If we compare the results of average time taken to wear different garments between males considering the number of buttons. For full sleeves with 7 buttons the mean is 35.7±6.5 sec, with 8 buttons mean is 40.3±9.2 sec. the t vale

is -2.953 and p value is 0.004, whereas for half sleeves with 5 buttons mean is 21.6±2.7 sec and with 6 buttons mean is 23.8±3.0, the t value is -3.762 and p value is >0.001.

4. DISCUSSION
The result of this study provided valuable insight into the influence of various variables and the time taken for upper body dressing in male and female population.

4.1The time taken for upper body dressing:
The time taken to wear a garment varies according to the type of garment. From a full sleeve shirt which took the longest time (38.62sec) to a T shirt which takes the least amount of time (12.22sec).Whereas for the females time range (11.0-28.34) and a mean (17.00sec) was computed based only one type of garment, i.e. a kurta. Some of the reasons for long range of time taken by the subjects may be due to, the preference of garment he/she is habituated to wear on a daily basis, handiness with closing of buttons on the garments, etc. However a similar study done on paraplegic subjects including both male and female with adequate sitting functional reach showed that the mean time taken is 23.66 (7.83)sec using a pullover shirt to dress and undress the upper body, (Jaskirat and Brockly 2008).

In a similar study by Pedretti (2001) cited in Maharaj (2006), the norm for putting on and taking off a shirt (excluding buttons) is 15 seconds (no fine motor is required for this),stressing the that buttoning usually takes significantly more time in donning a garment.

For the female subjects, average of 17sec was taken to don a kurta. The older age group took extra 1.2sec in dressing. This difference in time, underscores the influence of age on the time taken for dressing.

4.2: Factor that influence the time taken for upper body dressing.
The outcome of the study revealed an inconsistent association between handedness and time taken for dressing. There has been an observable difference of 6.6sec between right and left (right 38.20secand left 44.80sec) handed subjects in the time taken to wear a full sleeve shirt. However, this is not statistically significant (p = .350), as the result might have being influenced by the disparity between the number of subjects: 94 right and 6 left handed and the standard deviation (15.50) of the left handed subjects.

The numbers of button on the garments (full sleeve: 7 and 8, p=0 .004) and (half sleeve shirt: 5 and 6, p = 0.001) influenced significantly the time taken to don the garments. Average of 21.60sec was taken for half sleeve shirts (which contain 5 anterior buttons) and 35.70 seconds was used for full sleeve shirts (contain 5 anterior buttons and 2 cuff buttons). This difference in the time might have been influenced by the extra two buttons from the cuff sleeve, the length of the sleeve which makes the limb to travel a longer distance in the sleeve. It was also deduced that the cuffing of the sleeve took about 14.10sec. Also difference of 16.50sec was seen in wearing a full sleeve shirt (40.3) with 6 anterior buttons and 2 cuff buttons, and half sleeve shirt (23.80) with 6 anterior buttons. This increase in time may be due to:

Cuffing of a full sleeve involves unilateral fine motor skill which takes more time than bilateral hand use as typical of buttoning the anterior of a shirt.

With consideration given to the difference in the time required to cuff the two extra buttons on the shirt, average

of 15.30sec is considered to be the time taken for the limb to travel in a long sleeve and also cuff the sleeve. Hence the number of buttons and type of shirt (full or half sleeve) greatly influences the time taken for upper body dressing.

5. Conclusion

This study has provided a clear insight into the normative time for upper body dressing in young normal adults wearing full sleeve shirt (38.62sec), half sleeve shirt (22.80sec), and T-shirt (12.22sec) for males, and kurta (17.00sec) for females.

This study established reference values for time taken for upper body dressing which can be used in the clinical context.

The study showed that number of buttons and the type of garment (s) greatly influences the time taken to dress the upper body.

5.1: Implication of the Study

Normative database value can serve as a target value for rehabilitation for an individual. Thus it helps us to monitor progress and communicate with the patient easily. It also helps us to evaluate the effectiveness of various intervention aims at improving dressing task as well as to change intervention if needed.

5.2: Scope for further studies

This study opens avenue for further studies with respect to time taken for individual components of dressing. This could be done by video analysis and in turn common patterns used, could also be highlighted upon. On similar lines, lower body dressing analysis can be done.

5.3:Limitation

Since the clothing was specified as per the research protocol to standardize the procedure, it may not reflect the natural choice of dresses for the subject.

The subject being aware of the focus of the study to measure time taken for dressing could cause a variation from the actual time taken in the subject's normal environment.

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