

Self-care Ability among Elderly Patients with Osteoarthritis

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Abstract

Objective: The objective of this study was to assess the level of self-care ability and activity of daily living ≥ 60 years' elderly having osteoarthritis and determine their association with socio demographic variables.

Method: This cross-sectional study was conducted in 2019 in the OPDs of tertiary care hospitals of Peshawar, Pakistan. Total 384 elderly individuals were recruited through consecutive sampling. Data were collected through validated questionnaire Self-care items and Activity of daily living. Descriptive statistics like mean, and standard deviation were calculated. Chi square was applied to see an association.

Result: Among the 384 participants of the study, Majority of the patient was 68% of them were females. The mean BMI was 28.37 with a standard deviation ± 4.005 . Using the ADL checklist majority of the participants were moderately affected (41.7%) followed by the intact patient (30.7%), while the percentage of highly affected patient were (27.3%). The self-care activities of majority of the participants self-care were poor (71.6%), while the remaining (28.4%) patients were intact. A significant association of self-care ability was found with age, duration of osteoarthritis, type of osteoarthritis, grading of osteoarthritis, income level. Moreover, a significant association was also found between activity of daily living with age, gender, duration of osteoarthritis, type of osteoarthritis, grading of osteoarthritis, marital status with activities of daily living, and residence.

Conclusion: The study found that majority of the patient self-care practices and activity of daily living was poor, while highly significant association was found with socio demographic variables. Therefore, strategies shall be made to work on all those variables which are modifiable to make the life of these patients comfortable.

Keywords: self-care; osteoarthritis; risk factors; quality of life

Introduction

Osteoarthritis is the degenerative disease and chronic musculoskeletal condition of aging that limits the patient's ability of self-care. Pain due to osteoarthritis caused decreased sleep, isolation and impaired movement specially in elders that makes them difficult to perform daily routine tasks [2,10,11,1,2,3]. With aging water content of cartilage become low that gradually thins the cushion of joints resulting less flexible and prone to degradation and narrowing the joint space. Globally 10 to 15% of the world population has osteoarthritis including 9% of men & 18% of women above the age of 60 years [4,5]. The WHO [2003] reported 80% have restricted mobility while 25% were not capable to execute their daily activities [6,7]. Knee osteoarthritis is 4th most prevalent factor of disability among women and 8th in men in the world. [5,6].

Chronic diseases like osteoarthritis negatively affect the individual self-care ability to perform daily activities of life. These activities were affected by degenerative or anatomical and physiological changes

occurred in osteoarthritis patients.[8] Self-care ability is the practice of activities that individuals initiate on their own behalf in maintain, promote, restore or improve health and well-being [9, 1]. Individual would be able to utilize his physical energy which is sufficient for execution of self-care operations [10]. According to the WHO, self-care activities are undertaken by lay people on their own behalf, either separately or in participative collaboration with professionals [11, 12]. Self-care is effectively learned throughout life by interaction within physical, psychological, emotional realities. Self-care is shaped by values and beliefs learned in specific culture and elder's experiences [2, 13]. Losing self-care ability means losing independent care that affects individual quality of life. Elderly's need in illness and health reflected in their developmental stage. Weakened physically [pain in chronic diseases impacts on ADL], psychologically [depression, fear, anxiety], emotionally [demotivated to strive healthy, poor decision making] socially [loneliness] culturally impact on level of self-care ability resulting poor health maintenance, deficit in

self-care activities and disability in geriatric population [3, 12, 8].

Health promotion is significant factor for active aging that makes people to control themselves in order to improve their health. For implementing self-care activities, one should have knowledge about self-care [5]. [10] One of the Chinese studies declared disease rate of elder population were. greater than rest of population in term of chronic diseases with physical and mental in- capabilities of elders that further leads to decline in ability to do their self-care by themselves [1, 11].

Numerous studies have proven about progression of illness impact on self-care activities in later stage of life [10, 12, 15]. Most prevalent illnesses among Pakistani elders are hypertension, diabetes and arthritis. [16] Chronic conditions like osteoarthritis adversely influenced on activities of daily living [ADLs] and instrumental activities of daily living [IADLs] that make the person dependent and disable [2,15]. This study endeavored to expanded nurse's knowledge and their understanding regarding self-care practices. This study attempted to investigate the level of self-care ability among elder patients having osteoarthritis, and take action according to the level of deficit in self-care.

Methodology

Materials and method

This Study was conducted in Out Patient Departments (OPDs) of orthopedic units of Hayatabad Medical Complex, Khyber Teaching Hospital and Lady Reading Hospital Peshawar using cross-sectional study design. The study population was elder patient's ≥ 60 years having bilateral osteoarthritis at least from last 6 months. This Study was conducted from May 2019 to October 2019. Sample Size was calculated through open Epi calculator, with 5% margin of error and 95% CI. Sample size was calculated on the prevalence of self-care ability that was 50%. After calculation of the sample size came to be three hundred and eighty-four (384) patients Risk of drop out was 10%, using consecutively sampling technique.

The inclusion criteria for this study were: All patients (Male and Female) who were ≥ 60 years, and Patients who had bilateral osteoarthritis at least from last 6 months. While patient who were cognitively impaired, unconscious. unwilling to participate, paralyzed patients and had language barrier were excluded from the study.

Study Tool

The data were collected from the patients through pre-tested and validated two questionnaires. The questionnaire consisted of two parts; demographic variables and statements against Likert and dichotomous scale. Demographic variables have been put according to the need and nature of the study. The questionnaire which was about self-care ability and daily activities of osteoarthritis patients was used to determine the extent of self-care ability among elderly patients. Primary questionnaire "self-care items" has been taken from Iranian study among the elder patients having Osteoarthritis which was designed by Gerayllo, S. and Karimiankakolak, Z (2015). Formal permission has been taken from the author of Questionnaire "Self-care" through email. Osteoarthritis Self-care items consisted of 12 items on 5-points Likert type scale 1 for not at all, 2 for, seldom; 3 for sometimes, 4 for often and 5 for always. On the basis of median (30), two categories were made less than 30 and more than 30, whose responses were <30 show intact self-care ability while higher score >30 represented decreased self-care ability [17].

Another questionnaire was Content of this questionnaire was *Activities of Daily Living (ADLs)* that consisted of 19 items on dichotomous scale reliable with an average Chronbach Alpha "0.79". This questionnaire has four major dimensions of activities which was designed by Stamm et al. Statements of this questionnaire shown having or no deficit in activities of daily living regarding osteoarthritis patients. In the validated questionnaire; Activities of Daily Living, initial seven questions YES indicated "1" show increased self-care ability while "NO" indicated "0" decreased self-care ability. From eighth question to onwards it becomes in reversed order "NO" indicated "1" no deficit in self-care ability while YES indicated "0" having deficit in self-care ability. According to this study, different ranges in above mentioned questionnaire from elder are responses for Activities of Daily Living. These ranges show increased or decreased self-care ability by following categories; highly affected self-care ability 0-6, while moderately affected 7-13 and intact showed by 14-19 [15].

Data Collection Procedure

In this cross-sectional study, all patients who had osteoarthritis and came to (OPDs) of orthopedic units of Hayatabad Medical Complex, Khyber Teaching Hospital and Lady Reading Hospital Peshawar were consecutively selected.

Questionnaire has been translated into Urdu and question's relevance and translation has been validated by educational experts. Self-care ability was measured through the patient's responses to the questionnaire. Structure of questionnaire depicted its intactness and having deficit among osteoarthritis patients.

Data Analysis

Data were analysed through Statistical Package for Social Sciences (SPSS) version 22. In descriptive statistics mean and standard deviations were calculated for continues data whereas percentages were calculated for categorical data. In inferential statistics chi square was applied to see any significant association between outcome variables i.e., activities of daily living, self-care ability and demographic variables.

Ethical Considerations

Current study has been approved by Graduate Committee of the Institute of Nursing Sciences at Khyber Medical University, Advanced Studies and

Research Board (ASRB), Khyber Medical University (KMU) and Ethics board Committee of KMU. For data collection, permission was taken from nursing directors of respective hospitals and Ethical Committee Review Board of Hayatabad Medical Complex Peshawar as well. The study participants were informed about the study through written paper that included questionnaire; participants were guaranteed confidentiality and anonymity. Operational meaning of the terms used in the study was explained to the participants.

Results

Demographic data of the patients

Data of the current study collected from 385 participants in orthopedic OPD of three tertiary care hospitals of KPK. Out of 385, 130 were from HMC, 130 were from LRH and the rest of participants were from KTH. The number of female participants was higher (68%) compared to male, the age group 60-70 years was in majority (82.03%), while married patient was also high (87.7%) compared to single patients (see table 1).

Table 1: Demographic data of the participants

		Frequency n=384	Percentage
Gender	Male	123	32%
	Female	261	68%
Age	60 - 70 Years	315	82.03 %
	71- 80 Years	45	11.71 %
	>80 Years	24	6.25 %
Residence	Rural	245	63.8%
	Urban	139	36.2 %
Marital status	Married	337	87.76%
	Single	47	12.23%
Income level	10,000 - 20,000	63	16.40%
	21,000 - 40,000	190	49.47%
	41,000 - 60,000	96	25%
	≥ 60,000	35	9.11%
Occupation	Housewives	229	59.63%
	Farmer/Gatekeeper/Labor	47	12.23%
	Shopkeeper	32	8.33%
	Retired	43	11.19%
	Employed	24	6.25%
	Jobless	9	2.3%
Level of Education	Illiterate	239	62.2%
	1 - 10 grades	69	18.0 %
	> 10 grades	76	19.8%
Family History	Yes	152	39.58%
	No	232	60.41%
Duration of OA	6 months - 2 years	154	40.1 %
	≥ 2 years	230	59.9%
Type of Arthritis	Bilateral knee	229	76.04%

	Bilateral Knee & Hips	16	4.16%
	Bilateral Knee +Hands	32	8.33%
	Bilateral Knee +Spine	11	2.86%
	Bilateral Hands	8	2.08%
	Spine	8	2.08%
	Knee + others	17	4.42%
Grading	Grade I	118	30.72%
	Grade II	151	39.32%
	Grade III	90	23.43%
	Grade IV	25	6.51%
Height	Mean and SD	163.16 ± 8.38 cm	
Weight	Mean and SD	75.20 ± 9.41 kg	
BMI	Mean and SD	28.37 ± 4.00	

Activity of daily living scores

Table 2 explains the activity of daily living score of the participants that were responded in the form of Yes and No by the arthritis patients (see table 2).

Table 2: Activity of daily living score of the participants.

SN	Items	YES	NO
1	Are you able to walk without walking aids for 500 m?	239 (62.2%)	145 (37.8%)
2	Are you able to climb stairs up and down without walking aids? (Walking aids here included also the use of side rails)	129 (33.6%)	255(66.4%)
3	Can you use your fingers to grab and use small things like a pencil without problems?	335 (87.2%)	49 (12.8%)
4	Can you turn on a tap without problems?	340 (88.5%)	44 (11.5%)
5	Are you able to stretch your hand that you can shake hands without problems?	336 (87.5%)	48 (12.5%)
6	Are you able to bend or kneel down without problems?	42 (10.9%)	342 (89.1%)
7	Are you able to lift and carry a shopping bag with 5 kg without a problem?	227 (59.1%)	157 (40.9%)
8	Do you usually have any problem to eat independently?	81 (21.1%)	303 (78.9%)
9	Do you usually have any problem to sit down on the bed or on a chair and stand up without help?	221 (57.6%)	160 (41.7%)
10	Do you usually have problems to put on or take off clothes?	219 (57%)	165 (43%)
11	Do you usually have problems to go to toilet? (Sit down and get up from the toilet, keep clean or manage a urinary catheter, urostomy, or colostomy)?	198 (51.6%)	186 (48.4%)
12	Do you usually have any problems to take a bath or shower?	212 (55.2%)	172 (44.8%)
13	Do you usually have problems to prepare your food independently?	178 (46.4%)	206 (53.6%)
14	Do you usually have problems to use your telephone independently?	56 (14.6%)	328 (85.4%)
15	Do you usually have problems to manage your shopping independently?	253 (65.9%)	131 (34.1%)
16	Do you usually have problems to wash clothes independently?	268 (69.8%)	116 (30.2%)
17	Do you usually have problems to do light house work independently?	175 (45.6%)	209 (54.4%)
18	Do you usually have problems to do some times heavy house work independently? e.g. for heavy house work were sliding heavy furniture, cleaning, washing up the floor).	364 (94.8%)	20 (5.2%)
19	Do you usually have problems to manage your financial affairs independently? (Included withdrawal money/filling in a payment form).	156 (40.6%)	228 (59.4%)

Overall Activity daily living score of the participants

Figure 1 shows that majority of the participants were moderately affected (41.7%) followed by the intact patient (30.7%), while the percentage of highly affected patient were (27.3%) (see figure 1).

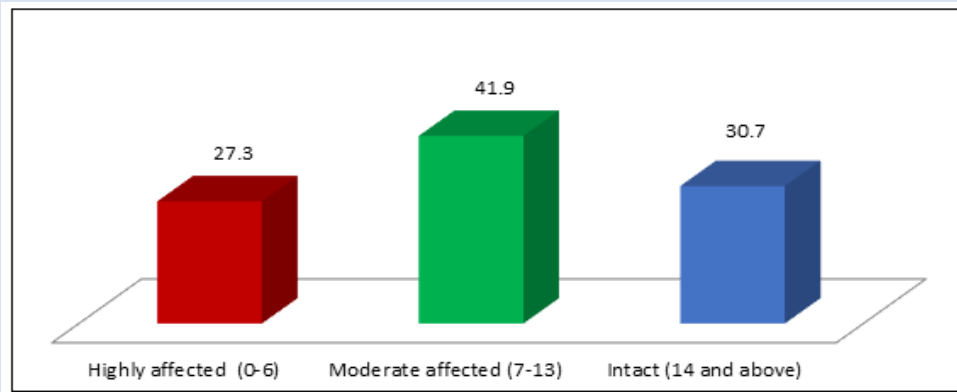


Figure 1: ADL Score of the participants

Participants Responses Regarding Self Care Items

Table 3: illustrates the self-care analysis of the participants (see table 3).

SN	ITEMS	Not at all N%	Seldom N%	Sometimes %	Often %	Always %
1	Using Suitable shoes	148 (38.5%)	55 (14.3%)	41 (10.7 %)	42 (10.9%)	98 (25.5%)
2	Taking medication regularly according to doctor order	2 (5%)	42 (10.9%)	211 (54.9%)	35 (9.1%)	94 (24.5%)
3	Seeing a doctor regularly	83 (21.6%)	113 (29.4%)	92 (24.0 %)	36 (9.4%)	60 (15.6%)
4	Praying in a sitting status	68 (17.7%)	90 (23.4%)	20 (5.2%)	54 (14.1%)	152 (39.6%)
5	Avoiding use of squat toilet	122 (31.8%)	12 (3.1%)	7 (1.8%)	47 (12.2%)	196 (51.0%)
6	Doing rest if needed	1 (3%)	27 (7.0%)	69 (18%)	119 (31%)	168 (43.8%)
7	Using sofa or chair for sitting	9 (2.3%)	34 (8.9%)	33 (8.6%)	87 (22.7%)	221 (57.6%)
8	Avoiding long time standing	55 (14.3%)	68 (17.7%)	43 (11.2%)	79 (20.6%)	139 (36.2%)
9	Doing recommended exercises	276 (71.9%)	69 (18.0%)	20 (5.2%)	15 (3.9%)	4 (1.0%)
10	Asking for help from family and friends	15 (3.9%)	42 (10.9%)	62 (16.1%)	93(24.2%)	172 (44.8%)
11	Using cane during walking	247 (64.3%)	46 (12%)	25 (6.5%)	21(5.5%)	45 (11.7%)
12	Going for swimming	383 (99.7%)	–	–	1(0.3%)	–

Overall self-care score of the participants

Figure 2 shows that majority of the participants self-care was poor (71.6%), while the remaining (28.4%) patients were intact (see figure 2).

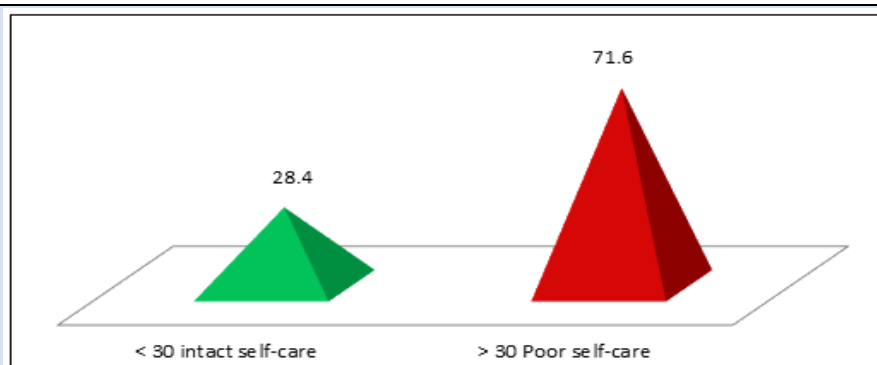


Figure 2: Self-care score of the participants

Association of ADL and self-care with selected demographic variables

A significant association of self-care ability was found with age, duration of osteoarthritis, type of osteoarthritis, grading of osteoarthritis, income level.

Moreover, a significant association was also found between activity of daily living with age, gender, duration of osteoarthritis, type of osteoarthritis, grading of osteoarthritis, marital status with activities of daily living, and residence (see table 4).

Table 4: Association of ADL and self-care with selected demographic variables.

		Percentage	ADL P-Value	Self-care P-Value
Gender	Male	32%	0.001	0.086
	Female	68%		
Age	60 - 70 Years	82.03 %	0.001	0.001
	71- 80 Years	11.71 %		
	>80 Years	6.25 %		
Residence	Rural	63.8%	0.004	0.003
	Urban	36.2 %		
Marital status	Married	87.76%	0.024	0.820
	Single	12.23%		
Income level	10,000 - 20,000	16.40%	0.003	0.042
	21,000 - 40,000	49.47%		
	41,000 - 60,000	25%		
	> 60,000	9.11%		
Occupation	Housewives	59.63%	0.004	0.006
	Farmer/Gatekeeper/Labor	12.23%		
	Shopkeeper	8.33%		
	Retired	11.19%		
	Employed	6.25%		
	Jobless	2.3%		
Level of Education	Illiterate	62.2%	0.119	0.353
	1 - 10 grades	18.0 %		
	> 10 grades	19.8%		
Family History	Yes	39.58%	0.60	0.843
	No	60.41%		
Duration of OA	6 months - 2 years	40.1 %	0.001	0.001
	≥ 2 years	59.9%		
Type of Arthritis	Bilateral knee	76.04%	0.001	0.001
	Bilateral Knee & Hips	4.16%		
	Bilateral Knee +Hands	8.33%		
	Bilateral Knee +Spine	2.86%		
	Bilateral Hands	2.08%		
	Spine	2.08%		
	Knee + others	4.42%		
Grading	Grade I	30.72%	0.001	0.001
	Grade II	39.32%		
	Grade III	23.43%		
	Grade IV	6.51%		

Discussion

Present study has shown that the mean BMI were 28.37 ± 4.005 ; most of study participants were females i.e., (68%) among them, (59.63%) were housewives, more than half participants were illiterate (62.2%) whereas Iranian study brought similar finding which was conducted on 87 older individuals, found the mean BMI of respondents were 28.37 ± 4.4 , while (88.6%) were female, (57.6%) were illiterate, (74.4%) were housewives [17]. Result of this study indicated that 62.2 % older individuals were able to walk without walking aids for 500 meters. A study from Austrian found significant finding 32.3% aged people

having osteoarthritis were able to walk without walking aids for 500 meters. Previous studies bared the fact that regular physical activities or moderate level exercises not only decreased the level of dependency, pain and disability among older patients of osteoarthritis but also increased muscle strength, flexibility resulting in low prevalence of chronic diseases [18-20]. Systematic review revealed that older with knee osteoarthritis were less likely to follow recommendation for physical activity 10.2 minutes/day ($P=0.011$) than without osteoarthritis in six European countries [21]. Moreover, Nott off and his colleagues emphasized on physical activity that it enhances life expectancy by 0.68 years worldwide [22].

Furthermore, detail analysis revealed that daily living (18.8%) was highly affected while (44.1%) was moderately affected elders who had bilateral knee osteoarthritis. Moreover, (4.1%) patients having bilateral knee with hip osteoarthritis also caused disability in old age. Consistent findings of existent research with American studies have been found in term of severity of disease by Kellgren and Lawrence radiographic classification. Creamer, P and his fellow's notified grade I (16.1%), grade II (33.9%), grade III (33.9%) and grade IV (16.1%) in knee osteoarthritis [23]. Additionally, present study also found those elderly whose job required kneeling, squatting and prolong standing or heavy lifting stuff getting knee and hip osteoarthritis. Prior literature supported the findings of present study regarding individuals whose occupation entailed kneeling, squatting or loading for longer period of time resulting worsening of knee and hip osteoarthritis [24, 19]. whereas people who were mostly engaged in manual dexterity having hand osteoarthritis [25].

In current study's finding regarding management of shopping independently; 65.9% older reported that they had problem. Contrary, only 15.1% elderly with osteoarthritis in Austrian study facing problem to manage shopping freely. In Pakistan specially Pashtun culture mostly women were not working outside, specifically females of rural areas were confined to their homes and not permitted to go for shopping or getting grocery from market. Literature revealed that similar findings where 48% disabled were unable to perform daily works specifically higher risk were found in aged females [1]. Existent study found (59.63%) sedentary life style was in line with global studies that have been conducted across six European countries. Aged people with knee osteoarthritis found in the United Kingdom (UK) and Spain [21]. had walked for short period of time comparatively without osteoarthritis which has shown strong association between inactivity or sedentary life style with progression of knee osteoarthritis [19,18].

Author of existent study has found exclusively 94.8% older faced problems in doing heavy housework, in contrast Austrian study declared that 34.6% older faced problems in doing heavy house work [9]. However, supported by previous researchers that heavy work for four hours/day by geriatrics increase risk of knee osteoarthritis [25].

Author of present study surprisingly noticed that out of 261 females only 3 subjects were able to do exercises on regular basis while (9) women did often.

Findings of local research on elderly females having osteoarthritis depicted 30% subjects exercised daily were comparatively high percentage with existent study (1%) which also indicated lack of knowledge about exercise laid influence on progression of osteoarthritis [26] Furthermore, Asian study declared 26.5% elder patients with osteoarthritis exercised daily [27]. Regarding self-care item, it has been identified that among (118) elders with grade I only (1) subject always used cane during walking whereas among (151) elders with grade II few of them (8) subjects always used cane while among (90) elders with grade III only (15) subjects always used cane. Author of present study has noticed that elderly patients were reluctant to use cane during walking. They felt shy and it created feeling of disability among them. In Iranian study 11.5% respondents have used cane during walking Existent study declared through self-care item among (292) elders of bilateral knee osteoarthritis (110) always prayed in sitting position while among (16) elderly having bilateral knee with hip osteoarthritis (14) always prayed in sitting position. It is evident from literature that 82.2% patients always prayed in sitting position [27].

In this context, it has been identified through "self-care item" among 384 geriatrics; 71.6% have shown poor ability to self-care whereas in "activities of daily living"; 27.3% subject's activities of daily living were highly affected while 41.9% were moderately affected. Furthermore, 50% female while 21% males had poor self-care ability. Nelson has used theoretical framework of Orem by using (ESCA) scale on 57 elderlies in order to assess their self-care ability and found good ability to care for themselves [11]. Stamm and his fellow explored in Austria the scarcity in the activities of daily living among ≥ 65 years elderly having osteoarthritis, more females had increased deficit in bending or kneeling down, walking for 500 meters without aids, climbing stairs up and down without walking aids, carry 5 kg bag, while decreased deficit in washing clothes, prepare food, do light house work, make phone call, shopping [15]. In present study author suggested the main reason of poor self-care ability found in females because more females (76.04%) had bilateral knee osteoarthritis. Secondly (68%) females were more in numbers than men. This finding depicts consistency with prior literature shown that female was more inclined to do self-care practice than men [28].

Conclusion

On the basis of results, it has been concluded that Pakistani elders with osteoarthritis have low level of self-care ability. This study has found that osteoarthritis among elders has limited their daily activities. Furthermore, low level of self-care ability laid physical, psychological, social, economic burden not only on elderly but also on caregivers, their loved one, and community and on the country as well. This study has also found that OA has affected elderly from moderate to severe. Physical inactivity, sedentary life style reported to have contribution in developing obesity. This study has also found a significant association between self-care ability and ADL with socio demographic variables. So, being a nurse, it is extremely important to work on modifiable risk factors that can reverse the decay in activities of daily living among older in order to enhance their ability to function properly.

Limitations

The sampling technique was non probability technique which makes it difficult to generalize the results. There was a time limitation. With sufficient time and large sample size would have brought more reliable results. Being female researcher, it would be quite difficult to ask questions from male subjects.

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