Knowledge, Attitude and Practice in Recurrent Shoulder Dislocation: an analysis of patients presenting at a tertiary referral centre

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ABSTRACT

Background

Early diagnosis and treatment of recurrent shoulder dislocation are crucial to avoid complications associated with multiple dislocations. Little is known about knowledge, attitude, and practice of recurrent shoulder dislocation among patients.

Objective

To assess the knowledge, attitude, and practice among patients regarding recurrent shoulder dislocation.

Method

A retrospective study of prospectively collected data from December 2019 to November 2022 among patients seeking treatment for recurrent shoulder dislocation at a tertiary care centre was conducted. A 16-item questionnaire, including 5 items regarding patients' knowledge, 2 items regarding attitude, and 2 items regarding practice on recurrent shoulder dislocation, was devised and responses were recorded. Continuous data were reported as mean ± standard deviation and categorical data were reported as number (percentage). Comparative analysis was done using student t-test.

Result

A total of 220 patients completed the questionnaire. Out of 220, 159 (72.27%) were not informed about recurrence after first dislocation, 146 (66.36%) felt that they were not properly counselled regarding treatment, and 172 (78.18%) responded that they did not know that recurrent shoulder dislocation can be treated. Among 220 patients, 171 (77.73%) responded that their quality of life was affected by recurrent shoulder dislocation, and first dislocation was relocated by doctors in 116 (52.73%), self in 78 (35.45%), and relatives in 26 (11.82%). The number of dislocations was significantly higher among patients who did not visit the hospital after their first dislocation.

Conclusion

Majority of the patients have positive attitude, but poor knowledge and practice regarding recurrent shoulder dislocation. The findings would be useful for planning strategies to improve patients counselling regarding recurrent shoulder dislocation.

KEY WORDS

Knowledge gap, Practice gap, Recurrent shoulder dislocation

INTRODUCTION

Shoulder is the most commonly dislocated joint in the body.[1] Patients presenting with first-time dislocation are often managed conservatively, with relocation and immobilization in arm sling for 1-2 weeks followed by rehabilitation.[2] The outcomes following conservative management is often satisfactory.[1,2] However, recurrence may occur in 17% to 96% of the patients.[3] Early diagnosis and treatment of recurrent shoulder dislocation is crucial to avoid complications that may be associated with multiple dislocations.[4] However, patients with recurrent shoulder dislocation often present late after the first dislocation to seek treatment because of lack of awareness and variations in treatment recommendations.[5]

There is lack of enough studies analysing the knowledge, attitudes, and practices (KAP) of the patients towards recurrent shoulder dislocation, especially among our population. It is presumed that there is a gap between KAP among patients for recurrent shoulder dislocation, which often results in the delay in seeking treatment.[6,7] Hence, this study was conducted to assess KAP in recurrent shoulder dislocation among patients presenting at tertiary referral centre.

METHODS

A descriptive, cross-sectional study was conducted after obtaining ethical approval from Institutional Review Committee (B & B IRC 22-50). All patients visiting to outpatient clinic with a history of shoulder dislocation two or more than two times between December 1, 2019, to December 31, 2022, were included in the study. Patients refusing to provide detailed data and those with no history of frank dislocation were excluded from the study.

A convenient sampling technique was used in a restricted environment. The sample size was calculated using the following formula:

$N=Z^2 pq/e^2$

$= (1.96)^2 \times 0.13 \times 0.87 / (0.05)^2$

$= 173.72$

In which,

z=1.96, constant for 95% confidence interval

p=0.13, prevalence of recurrent shoulder dislocation obtained from previous study.[8]

q= 0.87, 1-p

e= 0.05, 5% margin of error

The minimum required sample size was 174. All patients who met the inclusion/exclusion criteria during the study period were included.

A questionnaire was carefully designed and developed in English and Nepali languages. The questionnaire was pretested using a pilot study to identify, assess, and evaluate it before using it on the target population. A proper explanation of the research objectives and the study's pros and cons have been provided to the respondents. The data collection is performed and accomplished by one of the authors with experience in shoulder surgery. After piloting the study questionnaire, the actual data were collected, and the investigators constantly monitored the data collection.

The questionnaire included demographic information and KAP questions about recurrent shoulder dislocation. The questionnaire contained 16 items. Out of 16, seven were related to demographics, five were related to knowledge, two were related to attitude, and two were related to practice. The demographic variables included age, gender, hand dominance, side of injury, mechanism of injury, number of dislocations, and delay of treatment after first dislocation.

Informed consent was obtained from each participant, and declaration of Helsinki code of ethics was followed. The data was gathered using paper proforma, which were made in Nepali language and transferred to Google Forms and analysed using the Statistical Package for the Social Sciences (SPSS) software version 21. The responses of knowledge and attitude variables were presented as number (percentage). Continuous data were reported as mean ± standard deviation. Relationship between respondents' attitude towards recurrent shoulder dislocations, i.e., visiting hospital after first dislocation, and mean number of dislocations and delay in treatment was analysed using student t test. Level of significance was set at 0.05.

RESULTS

A total of 220 patients were included in the study. Out of 220, 159 (72.27%) were not informed about recurrence after first dislocation, 146 (66.36%) felt that if they were properly counselled earlier, they would have presented earlier at hospital for the treatment, 172 (78.18%) did not know that the treatment of recurrent shoulder dislocation can be done by arthroscopic and open method, 115 (52.27%) responded that being unaware about the treatment was the reason for delay in seeking treatment, and 143 (65%) knew about the treatment from orthopaedic surgeon (Table 1).

Out of 220 patients, 142 (64.55%) visited hospital after first dislocation, 91 (41.37%) immobilized shoulder for more than or equal to 4 weeks, and 171 (77.73%) responded that their quality of life was affected by recurrent shoulder dislocation (Table 2).

Out of 220, 116 (52.73%) responded that first dislocation was relocated by doctors, 78 (35.45%) relocated by

Table 1. Knowledge variables responses from participants (N=220)

Items	Response
Were you informed about recurrence after first dislocation?	Yes
	No
Do you feel that if you were properly counselled earlier, you would have presented earlier at hospital?	Yes
	No
Do you know that recurrent shoulder dislocation can be treated by arthroscopic and open method?	Yes
	No
Why you delayed your treatment	Unaware about treatment
	Reduced by myself
	Personal reasons
Who told you about treatment?	Surgeon
	Friends
	Family members
	Self

Table 2. Attitude variable responses from participants (N=220)

Items	Response
Did you visit hospital after first dislocation	Yes
	No
Was your quality of life affected by recurrent shoulder dislocation?	Yes
	No

themselves, and 26 (11.82%) relocated by relatives. Out of 220, 78 (35.45%) did not immobilize their shoulder after first dislocation and 91 (41.37%) immobilized for more than or equal to four weeks (Table 3).

Table 3. Practice variable responses from participants

Items	Response
Who relocated your shoulder?	Doctor
	Self
	Relatives
For how long your shoulder was immobilized	No
	1 week
	2 weeks
	3 weeks
	≥4 weeks

Mean treatment delay after first dislocation was 893.67 ± 1159.03 days (range, 60 to 7300 days). Out of 220 patients, mean age of the patient was 25.83 ± 14.5 years (range, 16 to 48 years. 202 (91.8%) were males, and 18(8.2%) were females, with a male-to-female ratio was 11:1. Nearly three-fourths of the patients had dominant limb involved (71.4%) with predominantly right shoulder (66.8%) involved as compared to left shoulder (33.3%). Fall injury was the leading cause of dislocation (38.2%), followed by road traffic accidents (RTA) and sports (Table 4).

Table 4. Demographic data of patients (N=220)

Characters	Outcomes
Gender, number (%)	
Male	202 (91.81%)
Female	18 (8.19%)
Side, number (%)	
Dominant	157 (71.36%)
Non-Dominant	63 (28.64%)
Mode of injury, number (%)	
Fall	84 (38.18%)
Sports	58 (26.37%)
RTA	52 (23.64%)
Others	26 (11.81%)
Mean number of dislocations, mean ±SD	10.58±9.64
Range, Number	2-60

Among 220 patients, 142 (64.55%) visited hospital after first dislocation, and 78 (35.45%) did not visit as the shoulder was reduced by the patient himself or with the help of nearby personnel. The median number of dislocations before treatment was 7, ranging from two to 60 times. The number of dislocations before treatment was instituted in patients who did not visit the hospital after first dislocation was significantly higher than those who visited after first dislocation (p=0.00) Similarly, the mean delay in treatment was 893.67 ± 1159.03 days, ranging from 60 to 7300 days. The mean delay in patients who did not visit the hospital was significantly higher than in those who visited after their dislocation (Table 5).

Table 5. Comparison of various parameters in patients visiting the hospital after first dislocation and not visiting

Variables	Visiting Hospital or not	Outcome	P-value
Median number of dislocations before treatment was instituted.	Patients visiting the hospital after first dislocation.	6	0.00*
	Patients NOT visiting hospital after first dislocation.	12	
Mean delay in treatment (in days)	Patients visiting the hospital after first dislocation.	733.99 ± 941.18	0.014#
	Patients NOT visiting hospital after first dislocation.	1184.37 ± 1437.37	

*Independent sample Median test, level of significance (α =0.05)
Independent sample Student t test, level of significance (α =0.05)

DISCUSSION

Recurrent shoulder instability is very common in patients with shoulder dislocation, especially in young individuals.[3,4,9] It results in multiple episodes of dislocations, also known as recurrent dislocation.[4] Multiple dislocations result in bone loss and cause significant functional disability.[4,10] However, this can very well be prevented by early diagnosis and treatment of recurrent shoulder instability.[11,12] However, literature shows that patients with recurrent shoulder

Table 6. Summary of literature comparing various parameters

	Age (mean years/ range)	Male/Female	Dominant arm number (%)	Number of dislocations before surgery (mean, range)	Delay before surgery in days (mean/ range)
Lee et al. 16	23	124/14	82 (59.2)	3(0-20)	NA
Flinkkila et al. 17	26	132/50	119	NA	NA
Novakofski et al.18	19(16-26)	183/71	123(48.8)	NA	NA
Boileau et al. 13	29 (14 – 45)	24/5	30(6)	4 (2-20)	959 (870-9000)
Merolla et al. 19	28	52/9	41(67.2)	6	1380
Zhu et al. 20	28.4 (16.7 -54.7)	42/7	32	19.9(3-100)	1959 (87-9000)
Our study	25.83(16-48)	202/18	157(71.4)	10.58(2-60)	893.6 (60-7300)

NA- Not available

dislocation may have more than 20 episodes of dislocations before seeking treatment and may present after 9000 days of first dislocation.[2,5,13] This study attempted to identify the reasons behind such delay in seeking treatment after first dislocation through a KAP analysis.

This study identified that most patients showed poor knowledge regarding recurrent shoulder dislocation. Majority (72%) did not know about the possibility of recurrence after first dislocation. This could be due to several reasons: 1. Patient did not seek help from medical practitioner at the time of first dislocation; 2. Patients did not give enough attention to details, such as follow-up suggestions and counselling regarding recurrence, at the time of first dislocation, or 3. Emergency department physicians did not counsel the patient well about possibility of recurrence, due to time constraints.[14] Similarly, Majority of the patients felt that they would have come for the treatment earlier if they were counselled adequately and were not aware that treatment of recurrent shoulder dislocation is possible (66% and 78%, respectively). Majority of shoulder dislocations are relocated by emergency department physicians and referred to orthopaedic surgeons for follow-up and counselling.[14,15] Because of socio-economic and geographical characteristics, patients often lost to follow up. This results in inadequate counselling regarding possibility of recurrence and availability of treatment for recurrent shoulder dislocation.

This study also identified that most patients showed good attitude towards recurrent shoulder dislocation. Majority of the patient visited hospital after first dislocation and admit that their quality of life is being affected by multiple dislocations (65% and 78%, respectively). However, majority of the patients had poor practices towards recurrent shoulder dislocation. The dislocation was relocated by the doctor in only half of the patients and the other half either relocated by themselves or got help from friends or relatives. Standard period of immobilization, i.e., 1-3 weeks, was followed by only 21% of the patients whereas large number of patients either did not immobilize or immobilized for more than or equal to 4 weeks (35% and 41%, respectively.[12]

The mean age of the patient in our study was 25.83 ± 14.5 years (range 16-48 years), and males experienced more recurrent dislocations, which was similar to other studies.[16-18] This male predominance could be due to their occupational exposure and more outdoor and sports-related recreational activities. Most individuals with dislocation had their dominant shoulder involved, similar to a study conducted by Lee et al.[16] Most common cause of recurrent shoulder dislocation was fall-injury, followed by a sports injury and RTA. Our geographical terrain could be a predisposing factor for falls. Fall was also the commonest cause of dislocation in a study conducted by Flinkkilä et al.[17] Mean number of dislocations (10.58 ± 9.6) before surgery was similar to the study of Bah et al.[6] In our study, the number of dislocations before surgery range from two to 60. The number of dislocations was higher compared to similar studies.[13,16-21] However, Zhu et al. found that the maximum number of dislocations in their study was 100 times.[20] Literature reveals that the number of dislocations before surgery range from two to 100 (Table 6).

This study identified that mean number of dislocations was around 11, with range from two to 60. The number of dislocations up to 100 times has been reported in the literature.[20] The mean number of dislocations in those who did not visit the hospital after first dislocation (15.32 ± 11.60) was significantly higher than those who visited the hospital (7.98 ± 7.19). This suggests that adequate treatment, i.e., proper duration about immobilization and systematic rehabilitation, may prevent the number of dislocation.[2,12] Similarly, the mean delay in treatment (1184.37 ± 1437.37 days) in patients who did not visit the hospital after first dislocation is significantly higher than those who visited the hospital (733.99 ± 941.18 days). In addition, the difference of around 300 days in getting treatment is also clinically significant, because large number of dislocations may occur in that span of time and bone loss may increase.[19] This suggests that hospital visit after first dislocation may allow patients to opt for early treatment.

There are several limitations of this study. Since this study was conducted at a single centre, this KAP analysis may not represent the situation of the whole country. Although

sample size was adequate, the number of questions to assess knowledge, attitudes, and practices were few, limiting the strengths of our concluding arguments. However, the findings of this research may act as a baseline parameter for future research. Another limitation could be the distinct group of our patients. We included only those patients who presented to our outpatient department and could not involve patients presenting to the emergency department. There may be some data collection bias, as patients were interviewed by one of the authors of the research. A third person's involvement in collecting the data would have reduced the bias. Since the study was based on patients recalling the event and answering the question, there may be some recall bias as some patients came for treatment after 20 years of first dislocation.

CONCLUSION

Majority of the patients have positive attitude, but poor knowledge and practice regarding recurrent shoulder dislocation. Although majority of patient visited hospital after first dislocation, they were unaware about possibility of recurrence, did not immobilize or immobilized more than or equal to 4 weeks, and around half of the patients relocated their shoulder either by themselves or with the help of relatives or friends. Hospital visit after first dislocation may reduce the number of dislocation and delay in receiving treatment for recurrent shoulder dislocation. These findings would be useful for planning strategies to improve patients counselling regarding recurrent shoulder dislocation.

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