Prevalence of and Factors Associated with Self-Medication with Diazepam in Parakou City in 2018

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ABSTRACT

Objective: The goal was to study the prevalence of and factors associated with diazepam self-medication in Parakou city in 2018.

Method: This study was a cross-sectional study including 450 subjects of both sexes who were at least 18 years of age and living in Parakou. The sample size was obtained using Schwartz's formula. A pre-tested questionnaire was administered for data collection from April 1st to August 31st, 2018, using two-stage cluster sampling.

Results: The sex ratio was 1.2, and the prevalence of diazepam self-medication was 19.11%. The mean age of those who self-medicated was 47 ± 18.2 years (range of 18 and 82 years). Difficulty falling asleep (56.40%) was the main reason mentioned. Factors associated with self-medication included age of 68 to 77 years, significant life event, alcohol consumption, low monthly income and marital status.

Conclusion: Self-medication with diazepam is related to the concurrent consumption of alcoholic drinks, which increases the risk.

Keywords

Clinical Trial Registration
This was an observational and cross-sectional study as described in the method.

Introduction
Benzodiazepines (BZD) are the therapeutic class of medicines that is most used for self-medication. The popularity of BZD among caregivers and patients is due to their fast anxiolytic effects [1,2], which is probably why they are most frequently used for self-medication in Latin-American countries [3]. Diazepam and BZD potentiate the inhibitory effect of gamma-aminobutyric acid [4]. Therefore, these medications are widely prescribed for anxiety and sleeps disorders and used in anaesthesiology with appropriate precautions [5,6].

Darker et al. [7] reported adverse effects among many users. Davies et al. [6] noted at least 119,165 patients from the United Kingdom who accepted withdrawal services for BZD addiction. It is strongly recommended that people avoid long-term use of

BZD [8]. In Ibadan (Nigeria), diazepam is available over-the-counter and is a dangerous prescription drug kept at home for self-medication [9]. In Parakou (Benin), no study has been conducted on diazepam self-medication.

Methods
This study was a cross-sectional and population-based survey conducted from April 1st to August 31st, 2018, in Parakou. The sample size was defined using Schwartz's formula.

Variables
The dependent variable was self-medication with diazepam. This variable was defined as the use of diazepam, "without a medical prescription, by people for themselves or for someone close to them and without medical advice" [10].

The independent variables were sociodemographic, clinical and behavioural characteristics.

Data processing and analysis
Data were analysed and organised using the EpiData and Excel 2010 software. A p-value < 0.05 was considered statistically significant. To study the stability of the associations, a univariate analysis (p<0.05) was simultaneously included in a logistic regression model using downward, step-by-step, successive iterations. The association strength and stability were estimated using odds ratios and 95% confidence intervals.

Ethical considerations
The study was conducted after approval from the local research ethics board for biomedical research at Parakou University. Data collection was carried out in accordance with the principles of the Wold Medical Association's Helsinki Declaration [11]. The informed consent of the respondents was required.

Results
The sample consisted of 272 (60.44%) men. The mean age was 38.5 ± 14 years (18 to 85).

Prevalence of and reasons for self-medication with diazepam in Parakou
The prevalence of self-medication with diazepam was 19.11%. The mean age of those self-medicating was 47 ± 18.2 years (range of 19 to 82 years). The reasons noted were for sleep (87.21%), to fight stress (6.98%), to forget worries (4.65%) and to avoid stress (1.16%). The participants acquired diazepam through a close relative's advice (81.40%), in drugstores (84.71%) and without a medical prescription (98.61%).

Self-medication with diazepam and associated factors
Tables 1 and 2 below present the correlations between diazepam self-medication and sociodemographic and clinical factors.

Multivariate analysis model and risk factors related to self-medication with diazepam in Parakou in 2018
Table 3 shows the synthesis of the final multivariate analysis of factors related to diazepam self-medication.

		Self-medication with diazepam				Total	p-value
		Yes		No		(N)	
		n	%	n'	%		
Sex	Male	55	20.22	217	79.78	272	0.459
	Female	31	17.42	147	82.58	178	
Profession	Yes	63	18.31	281	81.69	344	0.677
	No	7	19.44	29	80.56	36	
	Student	16	22.86	54	77.14	70	
Monthly income	≤ 68.35	40	17.32	191	82.68	231	0.002
	68.35 – 128.16	17	13.18	112	86.82	129	
	128.16 – 179.42	24	34.29	46	65.71	70	
Marital status	Married	50	15.53	272	84.47	322	0.000
	Single	18	17.65	84	82.35	102	
	Cohabitating	0	0.00	4	100.00	4	
	Divorced	1	33.33	2	66.67	3	
	Separated	4	80.00	1	20.00	5	
	Widow(er)	13	92.86	1	7.14	14	

Table 1: Correlations between self-medication with diazepam and sociodemographic factors (n= 86; n'= 364; N=450) [12].

		Self-medication with diazepam				Total	p-value
		Yes		No		(N)	
		n	%	n'	%		
Significant events	Yes	48	49.48	49	50.52	97	0.000
	No	38	10.76	315	89.24	353	
Psychostimulant intake	Yes	63	21.72	227	78.28	290	0.057
	No	23	14.38	137	85.63	160	
Alcohol consumption	Yes	73	22.81	247	77.19	320	0.001
	No	13	10.00	117	90.00	130	
Anxiety symptoms in the past 12 months	Yes	86	50.00	86	50.00	172	0.000
	No	0	0.00	278	100.00	278	

Table 2: Correlations between self-medication with diazepam and clinical factors (n= 86; n'= 364; N=450) [12].

Discussion
Limitations of the study
This study is based on self-reported data with a small sample size.

Prevalence of self-medication with diazepam and diazepam accessibility
In Parakou, the prevalence of self-medication with diazepam was 19.11%, indicating the extent of the phenomenon. Kairuz et al. [13] reported 13.36% in South Africa. The level of client satisfaction [14] was 91.86% in Parakou, and the economically poor and single subjects were most affected (Table 1). When the survey respondents were satisfied with treatment, they were more committed.

		N	Self-medication with diazepam		OR	IC $_{95\%}$	p-value
			Yes	%			
Age	18-27	138	13	09.42	1		
	28-37	91	11	12.09	1.32	0.56-3.05	0.518
	38-47	69	13	18.84	2.23	0.97-5.12	0.054
	48-57	30	14	46.67	4.41	3.36-21.04	0.000
	58-67	18	15	83.33	8.84	5.06-15.44	0.000
	68-77	3	2	66.67	7.07	2.72-18.35	0.015
	78-87	101	18	17.82	0.09	0.96-4.48	0.056
Monthly income	≤ 68.35	231	40	17.32	1.37	0.74-2.54	0.302
	68.35 – 128.16	129	17	13.18	1		
	128.16 – 179.42	70	24	34.29	3.43	1.69-6.99	0.001
	>179.42	20	5	25.00	2.19	0.70-6.82	0.165
Marital status	Married	322	50	15.53	1		
	Single	102	18	17.65	1.16	0.64-2.10	0.611
	Cohabitating	4	0	0.00	_	-	
	Divorced	3	1	33.33	2.72	0.24-10.85	0.398
	Separated	5	4	80.00	5.15	3.10-8.55	0.001
	Widow (er)	14	13	92.86	5.98	4.46-8.01	0.000
Significant event	Yes	97	48	49.48	8.12	4.82-13.67	0.000
	No	353	38	10.76	1		
Alcohol consumption	Yes	320	73	22.81	2.65	1.41-4.99	0.001
	No	130	13	10.00	1		

Table 3: Final multivariate analysis model of factors related to self-medication with diazepam. (N=450) [12].

In Parakou, diazepam is frequently sold in drugstores without a medical prescription (98.61%). Djralah et al. [15] reported the same results.

Factors related to self-medication with diazepam in Parakou
Sleep disorders (87.21%) were the most common reason, followed by a significant life event (48.49%) and anxiety symptoms (38.22%), Table 2. Seniors between 68 and 77 years (83.33%) largely practised self-medication with diazepam due to senile involution from numerous anxieties (Table 3). According to Verger et al. [16], co-prescription was a component of older individual's therapeutic programme.

Economic factors and the vicious circle of self-medication with diazepam
Using the guaranteed minimum inter-professional wage (SMIG) of 68.35 US dollars, 51.33% of the participants had a monthly income under 68.35 US dollars (Table 3). A poor living environment was found for "housing adaptation clients" [17]. Therefore, a poor living environment, as a direct result of low purchasing power, impacts the quality of life and then maintains the vicious cycle (Figure 1).

Behavioural and environmental factors
The goal was to search for a hypnotic effect (87.21%). Due to the fear of old symptoms recurring, some (41.86%) renewed former medical prescriptions as has been described [18]. Use of diazepam gradually progresses (81.40%) based on personal experience. The

way to buy diazepam in drugstores was to present with symptoms [15]. The sellers just share their own experiences [19] without knowing that prolonged exposure to diazepam leads to a gradual disruption of inhibitory GABAergic synapses [20]. For this reason, it was recommended to have recourse to others medications for treatment of anxiety and sleep disorders in older patients [21].

Figure 1: Vicious cycle of self-medication with diazepam.

Conclusion

The dangers of self-medication with diazepam require urgent mass communication.

Acknowledgments

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