

**Explanatory factors for adherence to self-care therapy among type II diabetics in Bandundu-Ville, Democratic Republic of the Congo**

**Abstract**

Diabetes is a real public health problem and a global economic burden that affects every country. Although its management is codified, most people with diabetes are unable to keep follow-up appointments. Thus, compliance with self-care, a concordance between therapeutic prescription and patient compliance, is therefore not limited to strict drug treatment. The purpose of this study was to identify the factors that explain adherence to self-care in patients with type II diabetes in order to reduce the incidence of complications related to this century's pandemic. The survey was carried out at the General Reference Hospital (HGR) of Bandundu-Ville in the Urban-Rural Health Zone of Bandundu-Ville in the province of Kwilu in DRC. This cross-sectional study of the nonprobability predictive correlational type for convenience and, conducted from March to April 2018, involved Type II diabetics. The sample size was determined on the basis of the Fischer formula. Thus, 138 subjects were selected. The semi-structured interview was used with closed and/or open-ended questions designed on a Likert-type scale with seven choices of answers in the design of the items.

The age varies between 46 and 76 years with an average age of  $50 \pm 13.7$  years. In addition, 98 participants (71.0% were married, 68 subjects (49.3%) had a secondary education, 85 subjects (61.6%) were in the private sector. Univariate analyses revealed that 52% of the subjects are in the age range 46 to 76 years with an average age of  $50 \pm 13.7$  years and 71.0% are married. The secondary level of education represents 49.3% but 10.9% have not studied. In addition, the majority of them have their private professional activities, i.e. 61.6%. PO in self-care (diabetic patients) influences the perception of threats caused by the onset of the disease ( $p > 0.000$ ,  $\chi^2 = 20.1$ ,  $\alpha = 0.05$  at  $df=1$ ).

In conclusion, the main determinants of PO to self-care by diabetics in order to meet the time required by caregivers to take diabetes mellitus medications in order of importance are: perception of threats caused by the onset of the disease (0.383;  $p < 0.05$ ) and expected outcomes (0.198;  $p < 0.05$ ). On the other hand, the sense of personal effectiveness ( $-0.103$ ;  $p < 0.05$ ) is not significantly related to ORP in self-care.

**Keywords:** Self-care, type II diabetics, Urban-Rural Health Zone of Bandundu Ville.

**1. INTRODUCTION**

Diabetes has been considered a major public health problem worldwide for several decades because, according to the International Diabetes Federation, in 2003, 194 million people worldwide had diabetes. Thus, by 2025, 26333 million, or 6.3% of the world's population, will have been reached if no preventive care is provided [1]. Faced with these estimates, the WHO explains that in 2025, there will be more than 300 million people with diabetes in the world compared to 125 million currently, 75% of whom will live in the developing country, which suggests the importance of this public health problem and the economic weight it will represent for these countries in the years to come. [2]. Indeed, it is considered to be one of the most common chronic diseases in almost all patients, so it is a definitive pathological condition requiring lifelong treatment.

Like other African countries, the DRC has more than one million people with diabetes, of whom 5 to 10% are children and adolescents, according to estimates from the national diabetes programme [3]. Diabetes mellitus is the most common cause of polyneuropathies. About 50% of individuals suffer from neuropathy within 25 years of diagnosis. Mathematically, in addition to its responsibility for 45% of all non-traumatic amputations, diabetes is the leading cause of blindness in adults. Thus, elderly people with diabetes are

49 twice as likely to suffer from high blood pressure, cardiovascular disease and stroke as those without  
50 diabetes [4].

51  
52 Self-care compliance is the concordance between the therapeutic prescription and the patient's  
53 compliance with it. It is therefore not limited to strict drug treatment. In diabetes, however, it can be  
54 applied to many non-pharmacological aspects, including compliance with dietary hygiene measures, self-  
55 monitoring of blood sugar levels, foot care and regular physical activity. The same complete source as 35  
56 to 80% of diabetics do not follow their self-care correctly. [5]. This study is in the field of public health  
57 versus behaviour change communication, aimed at preventing the consequences of Type II diabetes. In  
58 addition, to increase the likelihood of better blood glucose control, many self-care treatments must be  
59 performed. Failure to perform the latter leads to more or less long-term, irreversible or even fatal chronic  
60 complications.

61  
62 Despite knowledge of these facts, the long-term compliance rate for diabetic self-care remains very low in  
63 healthcare settings in general in the city of Bandundu in particular. In diabetes, compliance is likely to  
64 apply to many non-pharmacological aspects, including compliance with dietary hygiene measures, self-  
65 monitoring of blood glucose levels, foot care, and regular physical activity. However, 35 to 80% of  
66 diabetics do not follow their self-care correctly. People with this chronic condition are hospitalized twice as  
67 often as people without diabetes. As a result, they have longer hospital stays and more visits to  
68 ambulatory care services. The cost of health care per patient with diabetes is three times higher than that  
69 of a non-diabetic patient [6].

70  
71 In addition to these financial aspects, there is physical and emotional suffering and several limitations  
72 affecting patients' personal, family and social lives. However, diabetic complications can force individuals  
73 to give up their work, a source of remuneration and individual self-esteem. Therefore, patient compliance  
74 with the care plan is one of the essential elements of good diabetes management. In addition, non-  
75 compliance is an extremely frequent phenomenon, as it generally affects more than one in two patients,  
76 potentially affecting all aspects of treatment [7]. The treatment of diabetes is most often complex and  
77 involves hygiene-dietary modifications to optimize nutritional intake and increase physical activity, as well  
78 as the initiation of pharmacological treatments (oral antidiabetic agents and insulin) to compensate for  
79 insulin deficiency and combat insulin resistance. Statistically, optimal follow-up of treatment  
80 recommendations is associated with improved glycemic control (decreased glycosylated hemoglobin; HBA1c)  
81 but also reduces chronic complications of the disease and reduces its cost [8].

82  
83 Despite the potential benefits of pharmacological treatment, compliance remains low and poor  
84 compliance is reported to occur in 36 to 85% of diabetic patients, with the lowest results observed in  
85 patients receiving oral treatment. Notwithstanding, the most common factors affecting adherence to  
86 treatment are complexity of treatment, frequency of drug administration, cost, staff training in treatment,  
87 depression and adverse events or fear of them. [8]. The various elements presented so far demonstrate  
88 that diabetes has a huge impact at various levels of life. Thus, to minimize these sequelae as much as  
89 possible, it becomes relevant to reduce acute and chronic complications. For this reason, it is important  
90 for health professionals, mainly nurses, to explain to individuals with diabetes the close link between  
91 complications and blood glucose abnormality in order to promote greater management.

## 92 93 **2. MATERIALS AND METHODS**

94  
95 The survey was conducted at the Bandundu-Ville General Reference Hospital (HGR) of the Bandundu-  
96 Ville Urban-Rural Health Zone in Bandundu-Ville in Kwilu province in the DRC, offering preventive,  
97 curative and promotional services. This study is a cross-sectional study of the predictive correlational  
98 type.

99 This non-probability study, conducted from March to April 2018, was conducted for convenience and  
100 concerned Type II diabetics who had given their consent after informed consent and who spoke correctly  
101 in Kikongo, the local language. The sample size was determined on the basis of the Fischer formula. [9]

102

103 Thus, 138 subjects were selected. The semi-structured interview was used with closed and/or open-  
104 ended questions designed on a Likert-type scale with seven choices of answers in the design of the  
105 items.

106  
107 The structured interview used to collect information from subjects. Data collection was conducted using  
108 an interview guide containing two validated scales in French for measuring self-efficacy and health  
109 beliefs. A compliance assessment questionnaire and an elaborate questionnaire to collect socio-  
110 demographic and health data were used. All these instruments were borrowed from Plante (1998) and  
111 adapted for this study. The pre-survey initiated near our field of investigation took place from February 05  
112 to 14, 2018, i. e. ten days, with 25 diabetic subjects at the MUSABA Health Centre. It was carried out  
113 during the period.

114  
115 Descriptive analyses (frequency, mean, standard deviation, minimum and maximum values, and finally  
116 percentage) were used to describe the sample profile. The correlational analysis using the Chi-square  
117 association test (X<sup>2</sup>), the confidence interval of the Odds-ratio was performed between the different  
118 variables. Finally, simple linear regression was used to identify the explanatory factors that predict  
119 adherence to self-care therapy in diabetic subjects. Data analysis was performed using the SPSS  
120 software version 22.0. Probability values less than 0.05 were considered statistically significant.

121

### 122 3. RESULTS

#### 123 3.1 Socio-demographic characteristics

124

125 The sociodemographic characteristics of the participants is presented in table 1 below.

126

127 Table 1. Sociodemographic characteristics

128

Characteristics	Frequency	%
<b>Age (years)</b>		
19-45	65	47,1
46-76	73	52,9
<b>Total</b>	<b>138</b>	<b>100</b>
<b>Marital status</b>		
Married	98	71.0
Single	29	21.0
Divorced	7	5.1
Widows	4	2.9
<b>Total</b>	<b>138</b>	<b>100</b>
<b>Education level</b>		
Illiterate	15	10.9
Primary	34	24.6
Secondary	68	49.3
University	21	15.2
<b>Total</b>	<b>138</b>	<b>100</b>
<b>Professional activity</b>		
Public	53	38.4
Private	85	61.6
<b>Total</b>	<b>138</b>	<b>100</b>

129

130 The age varies between 46 and 76 years with an average age of 50 ±13.7 years. In addition 98 subjects  
131 or 71.0% were married, 68 subjects or 49.3% had a secondary level of education, 85 subjects or 61.6%  
132 were in the private sector.

133

#### 134 3.2 Bivariate analysis between study variables

135

136 The relationship between the self-care compliance and the perception of threats caused by the onset of  
137 the disease is presented in the table below.

138

139 Table 2: Relationship between the probability of self-care compliance (PO) and the perception of threats  
 140 caused by the onset of the disease  
 141

Perception of threats caused by the onset of the disease	Self-care PO		OR	IC <sub>95%</sub> (OR)	
	High PO n (%)	Low PO n (%)		Lim<	Lim>
Positive perception	40 (70.2)	25 (30.9)	5.271	2.520	11.022
Negative perception	17 (29.8)	56 (69.1)			
<b>Total</b>	<b>57 (100)</b>	<b>81 (100)</b>			

142  
 143 PO in self-care (diabetic patients) influences the perception of threats caused by the onset of the disease  
 144 ( $p > 0.000$ ,  $\chi^2 = 20.1$ ,  $\alpha = 0.05$  at  $df=1$ ).  
 145

146 Table 3 displays the relationship between PO for self-care and self-effectiveness

147  
 148 **Table 3: Relationship between PO for self-care and self-effectiveness**

Sense of Personal effectiveness	Probability of self-care compliance		OR	IC <sub>95%</sub> (OR)	
	High PO n (%)	Low PO n (%)		Lim<	Lim>
High effectiveness	37 (64.9)	48 (59.3)	1.272	0.631	2.566
Low effectiveness	20 (35.1)	33 (40.7)			
<b>Total</b>	<b>57 (100)</b>	<b>81 (100)</b>			

149 The PO in self-care is not a function of self-efficacy ( $p = 0.113$ ,  $\chi^2 = 0.45$ ,  $\alpha = 0.05$ ).  $\chi^2 = 0.45$  at  $df=1$ ,  $p = 0.113$ .

150  
 151 The relationship between PO to self-care and expected findings is displayed in the following table.  
 152

153 **Table 4: Relationship between PO to self-care and expected outcomes**

Résultats attendus	PO to self-care		OR	IC <sub>95%</sub> (OR)	
	High PO n (%)	Low PO n (%)		Lim<	Lim>
A positive outcome	35 (61.4)	35 (43.2)	2.091	1.048	4.173
A negative outcome	22 (38.6)	46 (56.8)			
<b>Total</b>	<b>57 (100)</b>	<b>81 (100)</b>			

154  
 155 Treatment for type II diabetes positively influences PO to self-care (DS because  $p > 0.015$ ,  $\chi^2 = 4.4$ ,  $\alpha =$   
 156  $0.05$ ) at  $df=1$ .  
 157

158  
 159 Table 5. Relationship between PO to self-care and socio-demographic characteristics  
 160

Age (years)	PO to self-care		$\chi^2$	df	p	Decision
	High PO n (%)	Low PO n (%)				
19-45	24 (42,1)	41 (50,6)	4,4	1	0,085	DS

46-76	33 (57,9)	40 (49,4)				
<b>Total</b>	<b>57 (100)</b>	<b>81 (100)</b>				
<b>Marital status</b>						
Married	41 (71,9)	57 (70,4)	5,5	3	0,391	DN
Single	11 (19,3)	18 (22,2)				
Divorced	5 (8,8)	2 (2,5)				
Widow	0 (0,0)	4 (4,9)				
<b>Total</b>	<b>57 (100)</b>	<b>81 (100)</b>				
<b>Level of education</b>						
Illiterate	5 (8,8)	10 (12,3)	13,9	4	0,043	DS
Primary	23 (40,4)	11 (16,6)				
Secondary	22 (38,6)	46 (56,8)				
Universitary	7(12,3)	12(14,8)				
<b>Total</b>	<b>57 (100)</b>	<b>81(100)</b>				
<b>Professional activity</b>						
Public	25 (43,9)	32 (39,5)	9,6	3	0,000	DS
Private	32 (56,1)	49 (60,5)				
<b>Total</b>	<b>57 (100)</b>	<b>81(100)</b>				

161  
162 PO to self-care is positively associated with the age of diabetic patients (OR=0.710 with p=0.024, X<sup>2</sup>=4.4,  
163  $\alpha$ , 005) and IC95% (OR)= [0.358 ; 1.404]. But it is not dependent on civil status (p<0,391, X<sup>2</sup>=5,5,  $\alpha$ ,  
164 005). The probability of self-care compliance is significantly associated with patients' education levels  
165 (p>0.043, X<sup>2</sup> = 13.9,  $\alpha$ , 005). In order, the probability of self-care compliance is significantly related to the  
166 professional activity of diabetic patients (p>0.000, X<sup>2</sup>=9.6,  $\alpha$ , 005).

### 167 3.3 Regression model to establish a relationship between variables

168  
169 The regression analysis for predicted variables from PO to self-care is presented in the table below.

170  
171  
172 Table 6: Results of regression analysis for predicted variables from ORP to self-care

Variables	$\beta$	t	p
<i>Variables of the conceptual model</i>		5,0	
<i>Perception of threats caused by the disease onset</i>	,383	4,906	,000
<i>Sense of personal effectiveness</i>	-,103	-,151	,250
<i>Expected outcomes</i>	,198	2,310	,022
$R^2_{,144}$ ; F= (dll : 1) 5,0; *p<0,05			

173  
174 After regression analysis, the predicted variables explain 5.0% of PO to diabetic self-care in patients with  
175 diabetes with (R<sup>2</sup>=0.144) followed by ANNOVA of (F= (df: 1)= 5.0 ; \*p0.05). The results specify that the  
176 main determinants of PO to self-care by diabetics in order to meet the time required by caregivers to take  
177 diabetes mellitus medications are in order of importance the perception of threats caused by the onset of  
178 the disease (0.383; 0.05), expected outcomes (0.198; 0.05) and on the other hand the sense of personal  
179 effectiveness ( -0.103 ;0.05) is not significantly related to PO to self-care. Thus, the hypothesis that the  
180 perception of threats caused by the onset of the disease, the expected results and the sense of personal  
181 effectiveness are only partially validated.

## 182 4. Discussion

183  
184 Perceptions of the threats caused by the onset of the disease, and the expected outcomes of treatment  
185 made it possible to predict compliance with diabetic self-care with patients. The study identified some  
186 socio-demographic variables significantly associated with adherence to self-care therapy in patients with  
187 type II diabetes on which interventions could be developed.

### 188 4.1 Psycho-sociodemographic characteristics of subjects

189  
190 The age of the subjects ranged from 46 to 76 years with an average age of 50±13.7 years. These results  
191 are consistent with the literature on type II diabetes, and this is due to the continuous progression of  
192  
193

194 diabetes in the DRC, and is therefore the result of several risk factors, including increased physical  
195 inactivity, obesity, longer life for some people and poor eating habits for others[10]. These results differ  
196 from the 68.6% of respondents who were between 20 and 34 years old (in the health zones of Ecuador  
197 and Katanga). [11]

198  
199 More than two thirds of them were married, or 71.0% of the subjects. Most of our subjects had a high  
200 school education level of 49.3%, but it should be noted that 10.9% did not study at all. Similarly, in Mali, a  
201 study found that the vast majority of its study population had never attended school, including 73.3% of  
202 daughters-in-law, 86.2% of mothers-in-law and 65.8% of spouses. 12] In Benin, illiteracy among pregnant  
203 women was observed in 67% of pregnant women interviewed during the study. The majority of them have  
204 their private professional activities, i.e. 61.6%. 13] In addition, a study on the use of sulfadoxine  
205 pyrimethamine among the pregnant women surveyed, the majority of them have their activities at home,  
206 i.e. 78.7% compared to 21.3% who have them out of home. 14] A study found that 40% of the subjects  
207 were employed and also 40% of the subjects had an independent occupation. [15]

#### 208 209 **4.2 Explanatory factors for adherence to self-care in type II diabetes**

210  
211 The results indicate that the probability of self-care compliance (diabetic patients) influences the  
212 perception of threats caused by the onset of the disease ( $p > 0.000$ ,  $\chi^2 = 20.1$ ,  $\alpha = 0.05$ ). Our results are in  
213 line with Plante's belief that improving and prolonging life through better diabetes control is possible  
214 through the implementation of recommendations and prescribed treatment. These recommendations  
215 should be tailored to the needs of each person with diabetes, including: a healthy diet on a regular  
216 schedule, a minimum of exercise three to four times a week for at least 20 minutes at each session, a  
217 healthy body weight, hair glucose monitoring, regular medication, periodic skin and feet. The same  
218 source adds that, the success of blood glucose control depends largely on the compliance of people with  
219 diabetes to achieve the points mentioned above. However, these activities that they should start and  
220 carry out on their own are called self-care. It is clear that the desired blood glucose control cannot be  
221 achieved without the active, permanent and daily participation of the affected individual. On the other  
222 hand, self-monitoring of blood glucose may be useful for most people with diabetes. Its potential benefits,  
223 such as reducing glycated hemoglobin, preventing and recognizing hypoglycemia and a more flexible  
224 lifestyle, are greater when the person is taught to adapt his or her food choices, physical activities and  
225 drug treatment based on the results obtained. [16]

226  
227 In addition, the above results show that the probability of self-care compliance is not a function of self-  
228 efficacy ( $p = 0.113$ ,  $\chi^2 = 0.45$ ,  $\alpha = 0.05$ ). Our results contradict the same study that states that, in people with  
229 type 1 diabetes, self-monitoring of blood glucose is an essential aspect of daily diabetes management. In  
230 a large cohort study in patients who tested their blood glucose at least three times daily, there was a  
231 statistically and clinically significant 1.0% reduction in HbA1c. The same author notes that the patient  
232 often needs to have more frequent blood glucose tests in order to have the information necessary to  
233 reduce the risk of hypoglycemia, modify his or her treatment and make appropriate lifestyle choices. [16]  
234 Although the expected outcomes of treatment for type II diabetes positively influence PO to self-care  
235 ( $p > 0.015$ ,  $\chi^2 = 4.4$ ,  $\alpha = 0.05$ ), one study corroborates our results which state that adherence to  
236 medication, diet, regular exercise, urinary tests and foot care is thus combined with glycated hemoglobin,  
237 blood glucose, fasting triglycerides and glycosuria results. The most significant correlation of compliance  
238 was identified with the perception of severity followed by benefits, vulnerability and barriers. The authors  
239 also find a significant association with action signals that explain 6.5% of the observance variance.  
240 However, the family medium analyzed separately accounts for 4.3% of the variance, this variance is  
241 usually integrated into the action signals: the combination of the two results in a variance rate of 10.8%.  
242 [17]

243  
244 Analysis of the above results provides sufficient evidence that PO to self-care is positively associated with  
245 the age of diabetic patients ( $p = 0.024$ ,  $\chi^2 = 4.4$ ,  $\alpha = 0.05$ ). Several studies support our results, including one  
246 indicating better overall compliance in older patients with type II diabetes. 18] Indeed, older diabetics (65  
247 years and older), compared to younger diabetics, consult more for their eyes and feet, eat more fruits and  
248 vegetables and less fat, eat more for pleasure and have fewer episodes of hyperphagia. [19]

249 The same previous authors complete that older patients rate their health status as worse than younger  
250 patients and that they have a higher number of hospitalizations and complications related to diabetes. In  
251 addition, it would be not only age itself that would predict compliance, but also the perceived severity of  
252 diabetes, the number of complications and associated hospitalizations. [18], [19] . But it is not dependent  
253 on civil status ( $p < 0,391$ ,  $X^2 = 5,5$ ,  $\alpha$ , 005). PO to self-care is significantly associated with patients'  
254 educational levels ( $p > 0.043$ ,  $X^2 = 13.9$ ,  $\alpha$ , 005). The majority of researchers agree that being more  
255 educated is associated with better adherence to treatment, including medication, physical activity and  
256 more frequent self-monitoring of blood glucose levels. For example, among type II diabetics with a high  
257 school education, 40% report no physical activity. [19]  
258

259 In order, the probability of self-care compliance is significantly related to the professional activity of  
260 diabetic patients ( $p > 0.000$ ,  $X^2 = 9.6$ ,  $\alpha$ , 005). Low income coupled with lack of health insurance coverage  
261 is related to lower compliance with oral antidiabetic medication. Di Matteo's study also shows a positive  
262 and significant relationship between NSE and medication compliance, especially in studies with adults  
263 using a numerical income measure. In addition, the situation becomes more complicated in the presence  
264 of co-morbid pathologies (costs of combination therapy, limits of coverage of insurance programs [19].  
265

### 266 **4.3 Results of regression analysis for predicted variables from PO to self-care**

267  
268 Finally, the results indicate the variables predicted by patients for self-care for type II diabetes, note that  
269 the variables explain 5.0% of PO for diabetic self-care in patients with type II diabetes with ( $R^2 = 0.144$ )  
270 followed by ANNOVA of ( $F = (df: 1) = 5.0$  ;  $*p < 0.05$ ). The results specify that the main determinants of PO to  
271 self-care by diabetic patients in order to meet the time required by caregivers to take diabetes mellitus  
272 medications are in order of importance the perception of threats caused by the onset of the disease  
273 (0.383;0.05), the expected outcomes (0.198;0.05) and the sense of personal effectiveness ( - .103m 0.05),  
274 but are not significantly related to the probability of self-care compliance.  
275

276 Our results are contrary to the one found by Bandura who argues that an individual may or may not be  
277 behaving in accordance with his or her belief in the latter's effectiveness in achieving the desired results.  
278 This element is already represented in the health belief model by the variable "benefits". The subject's  
279 personal conviction in adopting appropriate conduct to achieve the expected results is absent in this  
280 model. 21] Indeed, a person's belief in personal effectiveness is crucial because it influences all aspects  
281 of behaviour, including the acquisition of new concepts; the more confident a subject is in his or her  
282 abilities, the more initiative he or she shows, the more effort he or she makes and the more perseverance  
283 he or she shows in dealing with obstacles and threatening situations. [22]  
284

285 Similar results have been found by Rosestock who believes that the perception of control provides the  
286 individual with the motivation to take action. The first is the individual's acceptance of his or her  
287 predisposition to present the disease or its complications: perceived vulnerability. From denial, to  
288 considering the statistical possibility, to feeling really at risk of complications, the level of perceived  
289 vulnerability varies among individuals. Many people with diabetes refer to the fact that they do not feel  
290 sick or that they take the fact that they have diabetes lightly. Some of them are experiencing widespread  
291 anxiety about being diagnosed with diabetes. Others evoke a strong fear of complications, for example,  
292 by remembering that a family member who also has diabetes has had an amputation. [22]  
293

294 For Nelson, the perception of the severity of the disease is strongly influenced by the emotional state and  
295 the difficulties anticipated by being ill. The individual perceives his or her illness as serious when he or  
296 she is afraid or sees the medical consequences and daily activities. Fear of death, complications or loss  
297 of autonomy are all anticipated medical consequences for people with diabetes. The implications of the  
298 disease are complex on a daily basis and influence the perceived severity. [19]  
299

300 In addition, in light of Kanter's comments in a study that it seems rather difficult for nurses to increase  
301 their perception of control, that is, to have some control over the factors that facilitate or hinder the use of  
302 behaviour by patients. This perception of control will be possible if means are put in place by managers to  
303 facilitate their use and reduce barriers to its use. One of these ways would certainly be to involve  
304 community health workers in the process of implementing a strategic plan for home monitoring for certain

305 chronic diseases such as diabetes mellitus. [23]. Thus, the hypothesis that the perception of threats  
306 caused by the onset of the disease, the expected results and the sense of personal effectiveness are only  
307 partially validated.

308

## 309 5. CONCLUSION

310

311 At the end of this study, which aimed to identify the factors that explain adherence to self-care in patients  
312 with type II diabetes, univariate analyses revealed that 52% of subjects were in the age group 46 to 76  
313 years with an average age of  $50 \pm 13.7$  years and 71.0% were married. The secondary level of education  
314 represents 49.3% but 10.9% have not studied. In addition, the majority of them have their private  
315 professional activities, i.e. 61.6%.

316

317 Finally, the main determinants of PO to self-care by diabetics in order to meet the time required by  
318 caregivers to take diabetes mellitus medications in order of importance are: perception of threats caused  
319 by the onset of the disease (0.383;  $p < 0.05$ ) and expected outcomes (0.198;  $p < 0.05$ ). On the other hand, the  
320 sense of personal effectiveness ( $-0.103$ ;  $p < 0.05$ ) is not significantly related to ORP in self-care.

321

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