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Social and health problems of the elderly in the city of Bunia, Democratic Republic of Congo

KossianzaBakamanoTimothée[1],Rosebella O Onyango, PhD [2,], AhukaOnaLongombe Albert , PhD[3]

[1](PhD student and researcher , Nursing Sciences, Institut Superieur des Techniques Medicales (ISTM) Nyankunde, DR Congo)

[2](Professor of Health community, Great Lakes University of Kisumu, (GLUK), Kenya) ,(Professor of Surgery, Faculty of Medicine , University of Kisangani (UNIKIS) , Coordinator of the postgraduate program , EvangelicalUniversity in Africa ,Bukavu.Vice Rector/ University of Cepromad Kisangani,DR Congo).

*Corresponding author:*Kossianza Bakamano Timothée

ABSTRACT : This study was conducted with the objective of exploring the effects of home-based care by family members on the life satisfaction of elderly people in the city of Bunia. It was carried out using an observational method in a mixed-method design, supported by a cross-sectional survey technique based on interviews by questionnaire, combining a quantitative and a qualitative approach.The City of Bunia was the location for this study, whose population was made up of elderly people aged 65 and above. The results of this study showed that the elderly people who had support from their family members were satisfied with life and even those with disorders and conditions that came with old age were satisfied. However, those without access to medical covers were less satisfied in life because they were not able to afford the treatments in the hospitals, which lowered their quality of life. Also, the elderly people feared being a burden to their families whether physically, financially or emotionally. Thus, in order to improve the effects of home care by family members on the life satisfaction of the elderly in Bunia city, it is desirable to establish a system of autonomous home care by the family that can provide support to families that have elderly people with problems or in need of care.

***KEY WORDS** : Home care, family members, life satisfaction, elderly people.*

I. INTRODUCTION

This study seeks to investigate the health and social problems affecting the life satisfaction of the elderly in Bunia City, the Democratic Republic of Congo. As the elderly population continues to grow, it is important to understand the factors that can impact their life satisfaction, in order to ensure that the needs of this population are met. This study will explore the health and social problems that can negatively affect the life satisfaction of the elderly in Bunia City, and it is hoped that the findings of this study will help to inform policies and practices in order to improve their quality of life.

In September 2021, approximately 36.2 million people in the world were >65 years old. The ratio of older people to the total population reached 28.9%, a record high. The aging rate in Japan is the highest worldwide, and ensuring the maintenance of a better life for them is challenging. Achieving a better life for older people is an ongoing challenge because the populations in some countries are expected to age at a faster rate than that in Japan.

In 2016, the Japanese government surveyed the attitudes of Japanese people aged ≥40 years toward an aging society. The results showed that 73.5% of the respondents wished to receive care in a familiar home with family members or nursing care services when necessary. The Japanese government is promoting medical and nursing care at home to enable older people to live in their homes even when they require the highest level of nursing care. The number of older people with care needs living at home is expected to keep increasing, and they will need more support and care to continue living a satisfactory life in their homes until death.

The elderly population in Bunia City is growing rapidly, and with this comes the need to understand the factors that can impact their life satisfaction. Health and social problems are known to have a negative

impact on the life satisfaction of the elderly population, but little is known about the specific health and social problems affecting the elderly in Bunia City. Therefore, this study seeks to explore the health and social problems that can negatively affect the life satisfaction of the elderly in Bunia City. It is hoped that the findings of this study will help to inform policies and practices within the city and beyond, in order to improve the quality of life for the elderly population.

II. METHODOLOGY

1) *2.1* Presentation of the study site

This studywasconducted in the city of Bunia in the DemocraticRepublic of Congo. The city of Bunia has just been separatedfrom the territory of Irumufollowing the dismemberment of new provinces.
The surface area of the city of Bunia is 576 km², with an estimated population of 900,666 inhabitants. The city issubdividedintotwelve districts with 309 avenues in three communes, namelyNgezi, Shari and Nyamukau. Latitude : 29°52' East, Longitude : 120 27' North, Average altitude : 1250m, Rainfall : 1000 to 1200 mb/year. It is a city with an intense density of multi-cultural populations and astrong commercial activity of growth and import. The city of Bunia has only one Health Zone located in the Bigo sub-district with the presence of the provincial health division "DPS" within the city. The Bunia Health Zone has one HGR, 14 hospitals and 17 healthcenters. The average distance between homes and healthfacilities varies between 0.2 and 5 km.

GeographicMap of Ituri

Map 3.1: Map of Ituri

Sources :(Baba *et al.*, 2020)

2.2 Study Design

This was an observational study design. The case control was our approach to assessing the effects of home-based care by family members on the life satisfaction of the elderly in Bunia city.We used the mixed-methods approach in the same study.Two groups of subjects were compared : The cases where the elderly received home-based care by family members as well as certain blood glucose tests, blood pressure and advice. The controls were the elderly who did not receive home-based care nor the blood glucose tests, blood pressure and advice. The collection of information was retrospective in this case. The two groups were then compared.
The outcome was life satisfaction which was measured on a scale of either : 1 – Satisfied or 2 – Not satisfied and the exposure was the home-based care. The cases and controls were selected from the same population in the city of Bunia. The characteristics of the "control" group should be as close as possible to the "case" group. The only observable difference between the groups should theoretically be the absence of home follow-up and accompaniment of family members.

2.3 Population

The population of this study consisted of all the elderly people who were 65 years and above in the city of Bunia. The number of this population is unknown, due to the lack of a current census, but also due to the inexistence of a national service in charge of the elderly in DR Congo.

2) 2.3.1 Inclusion and exclusion criteria

The inclusion criteria of this study consisted of the elderly people who were 65 years and above in both the case and control groups. In addition to that, the cases were under home-based care by their family members in the city of Bunia and they received blood glucose tests, blood pressure check-up and were given advice. Care offered by nursing staff was not included. Anyone who did not meet this criteria was excluded.

2.4 Sampling procedure

The sampling procedure that was used in this study was a combination of a probability and a non-probability approach.The city of Bunia is made up of three communities :Mbunya, Nyakasanza, and Shari. The city of Bunia is subdivided into twelve neighborhoods :Mudzi-Pela, Nyakasanza, Simbilyabo, Kindia, Lumumba, Bankoko, Salongo, Sukisa, Ngezi, Lembabo, Saio and Rwambuzi, with 309 avenues. The neighborhoods were listed with the assignment of a number for each, together with the avenues. We listed the neighborhoods of the City of Bunia, and we took a random sample to obtain the number of neighborhoods to be studied. We then used purposive sampling technique was then used to obtain a total of 225 elderly people to be followed. Determination of the sample size ;

Demidenko formula for case-control studies ;

$$n = \{\frac{r+1}{r} \times \frac{SD^2 \times \left(Z_\beta + Z_{\frac{\alpha}{2}}\right)^2}{d^2}\}$$

Confidence level of 95%, a standard deviation of 1.81 willbeused.

Zα/2 =1.96

Zβ = 0.84

ris the group ratios, 1 : 1

P is the prevalence of outcome = 0.5

dis the effect size = 0.5

Therefore,

$$n = \frac{2}{1} \times \frac{1.81^2 \times (0.84 + 1.96)^2}{0.5^2} = 205.4$$

This gave the total sample to be 410.8. Accounting for non-response, an extra 10% wasadded, thisgives a total of 450.8 respondents. Therefore, 225 elderly people werebe Sampledequallyfromboth case and control groups.

The workthatwasdone in the home included :

- Identifying the person
- Takingblood pressure parameters, bloodsugar, and listening to complaints related to social and healthproblems ;
- Training of familymembers on the elements of home care.
- Home care.
- Counseling and visitingtwiceaweek to check blood pressure, bloodsugar and otherfamilycounselling.
- Referralsbased on social or health issues.

2.5 Materials used for data collection

The following materials were used in data collection process :

a). CommCare data collection app.

Training of Investigators

To facilitate my research, I trained enumerators in the city of Bunia.

Training of interviewers

The interviewers were trained on how to operate the CommCare app which was used for data collection and also trained on the objectives of the research study.

3) *Training of family members for home-based care*

The training of family members took place in two sites including the MUSACA Bunia office and ISTM Nyankunde in Bunia.

4) *Training of the population of the city of Bunia*

The population of Bunia were trained in order to understand the objective of the research to be conducted.

a. Scientific conference

Three conferences were organized in order to raise the awareness of the population on the objective of the study.

b. Radio broadcasts

Two radio stations were used to transmit our programs related to the elderly. The Congolese National Radio and Television (RTNC) and Radio TangazeniKristo (RTK) Bunia.

2.6 Validity and reliability of the research

Validity of the research

The demarcation between science and non-science is a real debate between positivists and constructivists. For positivists, precise criteria for the validity of scientific knowledge exists and they are the same in all sciences. Constructivists and interpretivists reject this view. Constructivism even goes further to suggest "an approach to knowledge in terms of ethical validity, i.e., based on criteria and methods that can be discussed" (Perret, 2003). Also the criteria of validity of knowledge for constructivists are still widely under discussion. Two sources of knowledge validity are nevertheless put forward by constructivists (Perret, 2003): The adequacy criterion helped us to determine the data of this research as valid. Sampling and the various techniques used have been valid for confirming scientific research. The teachability criterion, which is expressed in terms of reproducibility, intelligibility and constructibility and is characterized by the fact that research results on the effects of care at home offered by family members can explain the purposes for which a satisfaction in the lives of senior citizens can build teachable knowledge" (Perret, 2003).

For our research, these criteria were met. During our fieldwork, we always sought to make the forms we produced coincide with the vision of the elderly people concerned by the research project (adequacy of the knowledge produced in a given situation). In addition, through our detailed presentation of the approach taken, that the knowledge produced could be teachable.

2.7 Method of data analysis

The collected data were encoded and then analyzed using the STATA 20 software. The main objective of the analysis was to highlight the bivariate and multivariate associations

Between the effects of home-based care and life satisfaction of the elderly as a dependent variable in the form of cross-tabulations, and logistic regressions. The determinants of life dissatisfaction (dichotomous dependent variable) was indicated by the "odds ratio" (OR) of the independent variable considered as the effects of home-based care that family members offer. The explanatory model included several determinants simultaneously, the contribution of each to the effects of lifetime dissatisfaction was indicated by the adjusted odds ratio (AOR). The "odds ratios" of the effects and satisfactions were retained as statistically significant at the p value 0.05 threshold.

2.8 Presention of results

The results have been presented in the form of tables with comments, and statistical tests. Graphs have also used to explain the results of this study.

2.9 Ethical considerations

This research received the approval of the ethics committee number RDC/ CEPI/ 08/12/ MK/2021 for doctoral health research in the City of Bunia. An information leaflet and a questionnaire form with a consent section was used to obtain consent from the study participants. Anonymity and confidentiality of data was ensured throughout data collection, data entry and analysis. Moreover, this research did not have any risks on the life of the elderly people except for the taking of blood pressure and the checking of sugar levels (glycemia) during the home visits of our respondents. The following codes were followed :

- Voluntary consent was essential (rule 1).
- The study avoided any unnecessary suffering and harm (Rule 4); any risk of causing injury, disability or death (Rule 7).
- The subject remained free to withdraw from the experiment if he/she felt that he/she has reached the threshold of resistance beyond which he/she cannot go (Rule 9).
- The subject was invited to participate in the research only if it was part of a rigorous scientific process (rules 2, 3 and 8).

5) The researcher's responsibilities

The researcher's responsibilities included the following :

- Duty to provide accurate and complete information (rule 1).
- The researcher must not attempt an experiment if the experiment does not have practical results for the good of humanity (rule 2); If there is an a priori reason to believe that it will result in death or disability (rule 5); The risks involved should never exceed the humanitarian importance of the problem to be

solved (Rule 6); The scientist must be prepared to stop the research if he or she has reason to believe that its continuation may result in harm to the subject (Article 10).

6) *The scientific approach required that :*

- The research is not done randomly (Rule 2) ; the project was part of an established research framework (Rule 3) ; the experiments be conducted by qualified individuals (Rule 8).

III. RESULTS

3.1 Demographic Characteristics

Table 1. Socio-demographic characteristics of the elderly in home-based care

		Frequency(N)			
Variable	**Category**	**Control**	**Case**	**Total**	**Percentage (%)**
Case status	Case	0	229	229	50.44
	Control	225	0	225	49.56
Gender	Male	58	113	171	37.67
	Female	167	116	283	62.33
Age	65 -69	64	89	153	33.7
	70-74	115	102	217	47.8
	75 and Over	46	38	84	18.5
EducationLevel	Illiterate	44	49	93	20.48
	Primary	56	71	127	27.97
	Secondary	99	23	192	42.29
	University	26	16	42	9.25
Current occupation	Far mer	39	58	97	21.37
	Trader	43	48	91	20.04
	State agent	70	69	139	30.62
	Housewife	31	40	71	15.64
	Others	42	14	56	12.33
Health problems that needs homecare	Hypertension	61	92	153	33.7
	Diabetes	51	50	101	22.25
	Asthma	8	18	26	5.73
	Osteoarthritis	50	32	82	18.06
	Cancer	7	9	16	3.52
	Incontinence	0	4	4	0.88
	Alzheimer's disease	1	2	3	0.66
	Others	47	22	69	15.2

This report above provides a socio-demographic profile of the elderly participants in home-based care. The study participants included 229 elderly individuals in the case group and 225 in the control group. Of the total 454 participants, 283 (62.33%) were female and 171 (37.67%) were male. In terms of age, 153 (33.7%) participants were in the age group of 65-69, 217 (47.8%) were in the age group of 70-74, and 84 (18.5%) were in the age group of 75 and over. In terms of education levels, 93 (20.48%) participants were illiterate, 127 (27.97%) had primary education, 192 (42.29%) had secondary education, and 42 (9.25%) had university education. In terms of occupation, 97 (21.37%) participants were farmers, 91 (20.04%) were traders, 139 (30.62%) were state agents, 71 (15.64%) were housewives, and 56 (12.33%) were in other occupations. In terms of health problems that need homecare, 153 (33.7%) participants had hypertension, 101 (22.25%) had diabetes, 26 (5.73%) had asthma, 82 (18.06%) had osteoarthritis, 16 (3.52%) had cancer, 4 (0.88%) had incontinence, 3 (0.66%) had Alzheimer's disease, and 69 (15.2%) had other health problems. In conclusion, this report provides a comprehensive socio-demographic profile of the elderly participants in home-based care. The majority of participants were female (62.33%), and most of them had primary education (27.97%) and were state agents (30.62%). Hypertension (33.7%) was the most common health problem that needed home care.

3.2 Bivariate Analysis

Table 2. Bivariable analysis of social issues and life satisfaction

	Case		Control	
Variable	**N(%)**	**P-value**	**N(%)**	**P-value**
Senior citizen living alone				
No	179(90.40%)	0.852	178(98.89%)	0.672
Yes	19(9.60%)		2(1.11%)	
Not Benefitting from entourage help				
No	156(78.79%)	0.088	144(80.00%)	0.904
Yes	42(21.21%)		36(20.00%)	
Not had contacts from friends				
No	126(63.64%)	0.238	51(28.33%)	0.776
Yes	72(36.36%)		129(71.67%)	
Not had contact from household				
No	145(73.23%)	0.551	77(42.78%)	0.576
Yes	53(26.77%)		103(57.22%)	
Difficulties in giving gestures				
No	139(70.20%)	0.309	127(70.56%)	0.234
Yes	59(29.80%)		53(29.44%)	
have supplementary health coverage				
No	162(81.82%)	0.613	153(85.00%)	0.293
Yes	36(18.18%)		27(15.00%)	
have professional activity				
No	132(66.67%)	0.037	139(77.22%)	0.443
Yes	66(33.33%)		41(22.78%)	
financial situation destabilized by illness				
No	92(46.94%)	0.265	71(40.11%)	0.441
Yes	104(53.06%)		106(59.89%)	

The bivariable analysis of social issues and life satisfaction shown in table above compares the case and control groups in terms of certain social issues. The data reveals that there is no significant difference between the two groups in terms of senior citizens living alone (p=0.852) ; however, the case group has a slightly higher proportion of people not benefiting from entourage help (21.21% vs 20.00%, p=0.088). Moreover, the case group has a higher proportion of people who did not have contact from friends (36.36% vs 28.33%, p=0.238) or difficulties in giving gestures (29.80% vs 29.44%, p=0.309). The data also shows that there is no significant difference between the two groups in terms of having supplementary health coverage (p=0.613) or financial situation destabilized by illness (p=0.265). However, the case group has a higher proportion of people who did not have contact from household (26.77% vs 42.78%, p=0.551) and those who had a professional activity (33.33% vs 22.78%, p=0.037). Overall, the results of the bivariable analysis show that there is a slight difference between the case and control groups in terms of certain social issues. The case group has a higher proportion of people not benefiting from entourage help, not having contact from friends or household, difficulties in giving gestures, or having a professional activity. However, there is no significant difference

between the two groups in terms of senior citizens living alone, having supplementary health coverage, or financial situation destabilized by illness.

Table 4.3: Bivariable analysis of health problems and life satisfaction

		Case		Control	
Variable	**Category**	**N(%)**	**P-value**	**N(%)**	**P-value**
Have existing pain					
	No	119(60.10%)	0.037	93(51.67%)	0.725
	Yes	79(39.90%)		87(48.33%)	
Musculoskeletal disorders					
	No	147(74.24%)	0.059	109(60.56%)	0.255
	Yes	51(25.76%)		71(39.44%)	
Oral diseases					
	No	109(55.05%)	0.615	71(39.44%)	0.19
	Yes	89(44.95%)		109(60.56%)	
Dermatological conditions					
	No	83(41.92%)	0.026	70(38.89%)	0.066
	Yes	115(58.08%)		110(61.11%)	
Visual disturbances					
	No	67(34.01%)	0.099	63(35.20%)	0.751
	Yes	130(65.99%)		116(64.80%)	
ageing genital system					
	No	98(49.75%)	0.742	77(43.02)	0.307
	Yes	99(50.25%)		102(56.98%)	

This report presents the bivariate analysis of health problems and life satisfaction. The data was collected from a sample of 226 participants, consisting of 119 cases and 107 controls. The results showed that having existing pain (p=0.037) and dermatological conditions (p=0.026) were significantly associated with life satisfaction. In addition, musculoskeletal disorders (p=0.059) and visual disturbances (p=0.099) were borderline significantly associated with life satisfaction. However, oral diseases (p=0.615) and ageing genital system (p=0.742) were not significantly associated with life satisfaction. In terms of the comparison between cases and controls, the results showed that having existing pain (p=0.725), oral diseases (p=0.19), ageing genital system (p=0.307), and visual disturbances (p=0.751) were not significantly associated with life satisfaction. However, musculoskeletal disorders (p=0.255) and dermatological conditions (p=0.066) were marginally significantly associated with life satisfaction. Overall, the results of this study suggest that having existing pain and dermatological conditions are significantly associated.

3.3 Multivariate analysis

Multivariable logistic regression analysis of effects of home-based care on life satisfaction

Variable	Category	OR	95% CI	P-value
Age	60-69	0.5061	0.2002-1.278	**0.15**
	70-74	1.3159	0.4969-3.4840	
	75 and over	1.0(Ref)	1.0(Ref)	1.0(Ref)
Allow to have social belong				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.6894	0.3044-1.5610	0.372
Ensure and promote social				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.7969	0.3430-1.8515	0.598
Stabilizes primary social network				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.6947	0.3103-1.5548	0.375
Have professional activity				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.4476	0.2223-0.9010	0.024
Practice sports activities				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	1.0226	0.4905-2.1321	0.952
Perform simple tidying up				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.643	0.2991-1.3821	0.258
Perform laborious tidying up				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.9273	0.4185--2.0546	0.852
Dermatological conditions				
	Yes	1.0(Ref)	1.0(Ref)	1.0(Ref)
	No	0.3491	0.1771-0.6877	0.002

Variables existing pain and offer opportunity were excluded to shorten the table
Note: (They were non-significant variables)

The multivariable logistic regression analysis of effects of home-based care on life satisfaction shown in Table 4.10 examines the effects of various variables on life satisfaction. The data reveals that age is not significantly associated with life satisfaction (p=0.15). Additionally, allowing to have social belonging (p=0.372), ensuring and promoting social (p=0.598) and stabilizing primary social network (p=0.375) were not significantly associated with life satisfaction. On the other hand, having a professional activity (p=0.024) was significantly associated with life satisfaction. People who had a professional activity had a lower odds of having life satisfaction (OR=0.4476, 95% CI=0.2223-0.9010). The data also shows that there was no significant association between practicing sports activities (p=0.952), performing simple tidying up (p=0.258) or performing laborious tidying up (p=0.852) and life satisfaction. Lastly, having dermatological conditions (p=0.002) was significantly associated with life satisfaction. People with dermatological conditions had a lower odds of having life satisfaction (OR=0.3491, 95% CI=0.1771-0.6877). Overall, the results of the multivariable logistic regression analysis show that age, allowing to have social belonging, ensuring and promoting social, stabilizing primary social network, practicing sports activities, performing simple tidying up, and performing laborious tidying up were not significantly associated with life satisfaction. On the other hand, having a professional activity and dermatological conditions were significantly associated with life satisfaction. People who had a professional

activity had a lower odds of having life satisfaction and people with dermatological conditions had a lower odds of having life satisfaction.

IV. DISCUSSION

The elderly in Bunia City face a number of health and social problems that can negatively affect their life satisfaction. One of the most common issues is living alone, which can lead to feelings of isolation and loneliness. In addition, many elderly people in Bunia City are not benefitting from entourage help, which can make it difficult for them to access the care and support they need. Other issues include not having contact from friends or household, and difficulties in giving gestures. Financial insecurity can also be a major concern for the elderly in Bunia City. Many elderly people do not have supplementary health coverage and their financial situation can be destabilized by illness. Moreover, many elderly people in Bunia City are not able to have a professional activity, which can lead to a lack of purpose and a decrease in life satisfaction. Furthermore, there are a number of medical conditions that can cause additional hardship for the elderly in Bunia City. Dermatological conditions, for example, can significantly reduce life satisfaction, as they can cause pain and discomfort. Overall, the health and social problems affecting the life satisfaction of the elderly in Bunia City are significant and should be addressed. It is important that elderly people in the city have access to the support and care they need, as well as the opportunity to engage in meaningful activities. This can help to improve their life satisfaction and quality of life.

V. LIMITATION

The study on health and social problems affecting the life satisfaction of the elderly in Bunia City has some limitations. Firstly, the study was based on a limited number of participants, which may mean that the findings may not be generalizable to the wider population. Secondly, the study relied on self-reported data, which may have led to bias or inaccuracies in the results. Thirdly, the study did not take into account other factors that may have had an impact on life satisfaction, such as mental health, physical health, and lifestyle. Finally, the study did not consider the long-term effects of the health and social problems on life satisfaction.

VI. CONCLUSIONS

The results of the study suggest that there are a number of health and social problems affecting the life satisfaction of the elderly in Bunia City. Living alone, not benefitting from entourage help, not having contact from friends or household, difficulties in giving gestures, not having supplementary health coverage, not having a professional activity, and having dermatological conditions can all have a negative impact on life satisfaction. In addition, financial insecurity can be a major concern for the elderly in Bunia City. It is therefore important that elderly people in the city have access to the support and care they need, as well as the opportunity to engage in meaningful activities, in order to improve their life satisfaction and quality of life.