PSYCHOLOGICAL AND SOCIAL REPERCUSSIONS OF TUBERCULOSIS ON THE SEXUAL HEALTH OF PATIENTS AT CNHU-PPC IN COTONOU (BENIN)

MEHINTO Michel Mètonou **(1),** ALI Delpha **(2),** GNANVI Appolinaire **(3)** & SEBAPO Michelle-Ange **(4)**

(1) Applied Psychology Laboratory, University of Abomey-Calavi/Benin, Corresponding author,
E-mail **:** mipapaito01@yahoo.fr

(2) Department of Psychology and Educational Sciences, University of Kara/Togo

(3) Department of Sociology-Anthropology, University of Abomey-Calavi (UAC)/Benin

(4) Department of Psychology, University of Abomey-Calavi/Benin, Clinical Psychologist.

Abstract

Background and objectives

This study, carried out in National Center Hospitable and University of Pneumo-Phthisiology Cotonou (CNHU-PPC), explores the psychological effects of tuberculosis on patients' sexuality.

Methods

Inusing a research mixed, the study has questioned 56 patients tuberculous Thus that 20 healthcare providers and members of the Association of Former Cured Tuberculosis Patients(ASSAP-TB) selected via a so-called “reasoned choice” sampling. The collection toolsdata collection tools include questionnaires and interview guides, allowing the collection of both quantitative and qualitative information. The data was processed using a statistical analysis for quantitative information and thematic content analysis for qualitative information.

Results

The results reveal a high prevalence of disorders sexual, largely due to depression and social stigma, which decrease patients' energy and physical well-being while reducing their sexual desire. The study highlights the complexity of these interactions and the need for comprehensive management and multidisciplinary for improve there quality of life of the patients tuberculous. A Increased awareness of these issues among healthcare professionals is essential to provide asupport appropriate.

Conclusion

The data from this research can enable all those involved in the care of tuberculosis patients to better understand the psychological experience of tuberculosis patients and the various repercussions on their mental and sexual health.

Words keys : Tuberculosis, troubles sexual, anti-tuberculosis, depression, stigma.

INTRODUCTION

In 2018, in a report on global health, the WHO estimated that chronic diseases are responsible for 71% of all deaths globally, with cardiovascular diseases, cancer, chronic respiratory diseases and diabetes representing the leading causes of mortality (WHO, 2018). It had also already mentioned a notable increase in chronic diseases in sub-Saharan Africa, where health systems are often ill-prepared to manage this double burden of communicable and non-communicable diseases (WHO, 2013). These data are transposable to Benin, which is located in the sub-Saharan region of Africa. Data from the Ministry of Health of Benin show a significant increase in cases of chronic diseases, including diabetes, hypertension and chronic respiratory diseases (Ministry of Health of Benin, 2020). One category of chronic diseases is chronic respiratory diseases.

According to (WHO, 2023), chronic respiratory diseases include asthma, COPD, chronic respiratory infections, and conditions such as pulmonary fibrosis represent a significant portion of the global burden of chronic diseases. These conditions affect the airways and other structures of the lung, causing persistent symptoms that significantly impair patients' quality of life (WHO, 2023). Tuberculosis is one of the most common chronic respiratory diseases. Globally, tuberculosis remains a major public health challenge. Given its high prevalence, WHO (2022) considered it to be the second leading cause of death worldwide behind COVID-19 and before HIV /AIDS. In terms of statistics, this institution estimated that approximately 10 million people had contracted tuberculosis in 2020. In this patient population, there were 1.5 million deaths. This shows the health disaster that tuberculosis represents. The Ministry of Health of Benin, through the National Tuberculosis Control Program, reported in 2021, approximately 6,000 new cases each year. The potential for the spread of this pathology is worrying in Benin. Thus, tuberculosis impacts society on a health, economic and social level. These consequences affect the population as a whole.

Looking at the impact of tuberculosis on patients who suffer from it, Lorenzo (2016) highlighted that it can have physiological, psychological and social repercussions on patients, leading to various disorders, including sexual disorders. However, sexuality has a major impact on psychological and social balance and the development of the individual and other actors in their immediate social environment. This influence on sexuality can arise from various factors. On the one hand, the physical symptoms associated with chronic diseases, such as pain, fatigue and sexual dysfunction, can directly affect the ability of patients to engage in satisfying sexual activities (Brotto and al. 2010). On the other hand, the psychological consequences of chronic diseases, such as depression, anxiety and stress, can also negatively impact the sexual life of patients (Araujo and al. 2009). Laumann and al. (1999) in turn highlighted the importance of taking into account medical and psychosocial factors in the assessment and management of sexual disorders in people with chronic diseases. Thus, the analysis of the effects of tuberculosis on the patient's sexuality is a very important aspect to investigate (Garcia, 2007). However, the study of sexual disorders related to the impacts of tuberculosis remains very little investigated. In addition, there are no objective

elements that can explain the lack of interest of researchers in this aspect of tuberculosis. The observation of this gap and the psychological and social suffering of patients and their families, lead us to take an interest in this question. Indeed, in the specific context of the National University Hospital Center of Pneumo-Phtisiology of Cotonou (CNHU-PPC) in Benin, tuberculosis patients constitute a vulnerable population requiring special attention in terms of mental and sexual health.

At CNHU-PPC, we found that some patients under anti-tuberculosis treatment came to complain of fatigue, abdominal and joint pain, nausea and vomiting. We also recorded complaints about sexual and reproductive health. Many patients reported sexual disorders such as erectile dysfunction, decreased libido and hypersexuality, dysmenorrhea, and lubrication problems. These sexual disorders in TB patients are frequently neglected by health professionals who generally have a trivializing attitude, considering that these disorders are temporary. And, even admitting that they are temporary, these disorders do not fail to cause significant suffering for the patient and his family. This attitude, which disregards the impact of the situation and the suffering of patients, leads patients to seek solutions that are generally not conducive to their state of health. Thus, they sometimes come with a profound alteration of their state of health or an acute complication of a pathology resulting from self-medication or a combination of chemical products. In addition to the absence of substantial support in the face of these disorders and the suffering they cause, patients are affected emotionally and socially. We also sometimes observe a weakening of self-esteem with social withdrawal and a limitation of patients to participation in community life activities. Already this category of people suffer discrimination because of the high potential for the spread of their pathology. As a result, few people really admit and accept them. In this context of limited social relationships, low self-esteem and complications of sexual and identity disorders, patients are anxious with a considerable decrease in vitality. Thus, the absence of medical, psychological and social support in the face of tuberculosis makes it complicated to manage this pathology and its experience by patients and their entourage. Considering the psychological impacts of this pathology and its consequences on patients, we wonder how the sexual health of patients at CHNU-PPC is affected?

1. Review of literature

Chemotherapy treatment of certain physical or psychological pathologies requires sometimes the use of specific drugs which can have effects on different functions and on there health in general. The drugs used in the treatment of there tuberculosis make part of this category of products chemicals of which there prolonged holdseriously impacts other functions. This literature review constitutes a synthesis of the state of there question on the troubles sexual consecutive to treatments chemotherapy of tuberculosis.

In terms of prevalence, Aouam and al. (2007) estimated that tuberculosis is a disease infectious who can be cured grace has a treatment medicinal effective. Isoniazid, there rifampicin, the pyraznamide,Ethambutol and streptomycin are the main drugs

used in the management of care of patients with tuberculosis. The accountability and practical conduct to be adopted in the event of an observed adverse effect (hepatic, cutaneous, digestive...) during anti-tuberculosis treatment are influenced by several factors related has the effect undesirable himself and at medicine used. The effects secondary caused by the combination death effects unwanted understand there fatigue and the pain. In the along the same lines, Camerlain (2009) had highlighted that pain, fatigue and limitation joint mobility have a detrimental effect on sexuality. In addition, arthritis can have as consequences on sexual function a decrease in sexual desire, dryness vaginal due at syndrome of Sjogren at the house of there women and a dysfunction erectile more frequent at the house of men.

Sexual problems in tuberculosis patients treaties can be attributed to a series of factors pathophysiological and psychological associates to effects secondary of the anti-tuberculosis drugs. By example, Gordon and Thomas (2016) have note that isoniazid east often responsible of neuropathies peripherals and of cytolysis hepatic. The use of ethambunol can to provoke a optic neuropathy, who, good that mostly visual, trains a degradation of the state psychological and decreased libido. Like other aminoglycosides, streptomycin is linked to toxic effects on hearing and kidneys, leading to stress and discomfort general who can have a impact indirect on the function sexual (Wen Qing And al., 2018). The onset of sexual disorders in tuberculosis is therefore the result of a complex interaction between the side effects of anti-tuberculosis drugs, pain, fatigue, physical constraints and factors psychological. A major challenge for public health lies in the coexistence of tuberculosis and depression, with a high frequency of depression in patients with tuberculosis. According to different studies, Prevalence estimates differ, but several reports, including that of Alemu and Zeleke (2023), state that the general prevalence of depression in patients with tuberculosis rate was rather high. Besides her influence on there health mental, there depression at the house of the tuberculous can also contribute to the onset of sexual disorders. The research of Laforgue and al. (2022) highlight a high frequency of sexual disorders within the framework of the depressive disorder. According to the disinterest theory psychological, depressive symptoms such as anxiety, loss of interest and fatigue may decrease sexual desire and impair the ability to engage in activities satisfying sexual experiences. By elsewhere, the drugs prescribed for cure there depression can also to release of the problems sexual at the house of the patients reached of tuberculosis. In moon of their studies, Licitsyna and al. (2011) showed that some antidepressants, particularly inhibitors selective serotonin reuptake inhibitors (SSRIs), were associated with side effects sexual such that there disturbance of erection, anorgasmia and there drop of there libido.

There stigma social stay a issue determinant for the patients tuberculous, with devastating consequences for their mental health, psychosocial well-being and access to care. Farhat and al. (2023) proved after a study involving 103 patients that stigma is one of the challenges patients face tuberculosis patients, including in health care facilities. In addition, the social stigma associated with tuberculosis can have profound repercussionson sexual health patients. Of the research have watch that there stigma social can be associated has of the levels high levels of anxiety and

depression in the patients tuberculosis, which may contribute to the emergence of sexual disorders such as erectile dysfunction, anorgasmia and loss of sexual desire Ashaba and al. (2021).

2. Methodology

We have adopted a mixed study approach. This approach east particularly useful for get a understanding more complete and nuanced of the phenomena studied. From a sociocultural perspective relative to our area of investigation, sexuality remains a taboo phenomenon. This taboo is even more so when it comes to difficulties relating to functions or operation of the organs genitals. In the mobilization of targets, Only men were spontaneously interested in our study, while women were manifest a disinterest. Thus, the target group consists only of patients from male, affected by tuberculosis, at any stage of the disease, sensitive or resistant and receiving care on an outpatient basis or in internal at CNHU-PP/C. The choice of the people involved in this study East base on the use of the methods sampling No probabilistic. So, for the population of people under anti-tuberculosis treatment, the reasoned choice of 56 affected patients. We also interviewed a second group made up of 20 care providers (doctors, nurses, majors, social workers, nutritionists, biologists and communications officer) as well as some members of the Association of Former Cured Tuberculosis Patients (ASSAP-TB).

The collection of empirical data within the framework of this research, techniques corresponding to the nature of the research are retained. It it is about of there research documentary, observation, the interview and the administration of questionnaire all grouped in Table I. The interviews are are conducted in isolated locations to facilitate free expression. The average duration of the transfer of tools is approximately thirty (30) minutes. The collection of empirical data took place from January to March 2024. During these three months,we had individual listening sessions with each target in our sample. treatment of the data empirical issues of ground has summer accomplished first of all of way manual, the data from the interview after being transcribed, were processed with the software Stata first by entering the data and compiling it. As for to data quantitative, they were processed using Excel 2016 software and analyzed with the statistical descriptive.

3. Results

3.1. Demographic information

This study was conducted on 56 patients, all male, whose age groups range from 25 to 50 years. These participants have access to anti-tuberculosis treatments at the CNHU-PPC and among them, the age groups of 35-40 years and 40-45 years are the most representative with respectively 25% each of the population surveyed. These are followed by those of 30 to 35 and 45 to 50 which represent respectively 17.9% each and that of 25 to 30, 14.3%. These data are shown in Tables II and Figure 1.

Subsequently, it should be noted that: 37.5% of patients have CEP, which represents the majority of group, followed by those with the BEPC, who constitute 32.14%,

while 23.21% havethe BAC, and only 7.14% have reached a higher education level (Table III).

Furthermore, 32.14% of patients are single, 25% are divorced, 23.21% arein a relationship, and 19.64% are widowed. As for professional status, the largest. The proportion of patients is made up of craftsmen with 39.29%, followed by entrepreneurs who represent 33.93%, while 26.79% are state officials (Table III).

3.2. Depression and erectile dysfunction

We conducted a study on the relationship between depression and erectile dysfunction. The first results of this component aim to present and interpret the data relating to the Beck Depression Scale that we administered to patients participating in our study. These results recorded in the figure allow us to notice the majority of patients tuberculosis presents of the signs important of depression as the watch there figure next (Figure 2).
This figure reveals that a large majority (60.71%) of tuberculosis patients have a severe depression, 16.07% have moderate depression, 17.85% have mild depression and 5.35% show no signs of depression. Data indicate that depression is common among the majority of respondents. These data provide more reasons to investigate the link between depression and sexual disorders in patients tuberculous.

From Table IV, it appears that 26 suffer from both depressive syndrome and erectile dysfunction, 08 suffer from neither depressive syndrome nor erectile dysfunction, 18 suffer from depressive syndrome without erectile dysfunction, 04 suffer from erectile dysfunction without depressive syndrome. This distribution highlights the link between depressive syndrome and erectile dysfunction. The prevalence of erectile dysfunction is higher in individuals also suffering from depressive syndrome. However, the case of patients suffering from erectile dysfunction in the absence of depressive syndrome highlights that there could be another etiology for the sexual disorders observed.

3.3. Depressive syndrome and libido disorders

The cross- tabulation table we have examined reveals important data on the correlation between depressive syndrome and decreased libido.

26 Patients suffer from both depressive syndrome and decreased libido. These individuals represent a significant group in our sample. The fact that 26 people suffer from both depressive syndrome and decreased libido indicates a notable correlation between these two conditions. Elsewhere, 18 are diagnosed with depressive syndrome and hypersexuality. The words of one concerned patient are translated as follows:

> *"[…] When my brothers learned that I had contracted TB, none of them wanted to vouch for me so that I could receive treatment. Their lack of compassion plunged me into a state of sadness and dismay but fortunately, a third person helped me. I was very frustrated and I still hold it against*

> *them. But it does not affect my sexuality in any way with my wife who complains that I ask too much. On the contrary, my sexual desire has increased tenfold and there is a force that controls me and sexual ideas cross my mind very often. That is a problem too! Laughing. […]"* ***[Excerpt from an interview with HF Taxi-motorcycle driver, 41 years old]***

This subgroup raises questions about the specific effects of depressive syndrome on sexuality. It is interesting to note that among these people, 18 reported problems of hypersexuality. Subsequently, 04 patients, still referring to Table V, present a decrease in libido and an absence of depressive syndrome and 08 patients present hypersexuality without depressive syndrome or decrease in libido. This control group represents those who present neither the depressive syndrome nor a decrease in libido.

3.4. Social stigma and erectile dysfunction

Here, we examine the results of a cross-sectional analysis between two key variables: social stigma and erectile dysfunction.

Of 30 patients with erectile dysfunction, 16 experienced a situation of stigmatization and 14 stated the opposite, of 26 patients without erectile dysfunction, 16 also experienced a situation of stigmatization and 10 patients were not concerned. In addition, a total of 32 patients were victims of social stigmatization compared to 24 who did not experience this situation (Table VI).

This finding highlights that of the 56 people surveyed, a similar number of people, whether in the presence or absence of the inability to obtain or maintain an erection, reported an experience of social stigma (16 in each group). Thus, the inability to obtain or maintain an erection is not necessarily associated with an increase in the experience of social stigma according to these data, since the distribution is fairly balanced between the two groups.

3.5. Stigma and decreased libido

The cross-tabulation table below presents an analysis of the correlation between social stigma and decreased libido. The data show that 32 TB patients Of the 56 reported experiencing social stigma, 16 of them had hypersexuality and 16 of them had decreased libido. Then, 24 of the 56 TB patients did not report experiencing social stigma, 10 of them had hypersexuality and 14 of them had decreased libido (Table VII).

It emerges from this analysis that the experience of social stigma is present in an equivalent manner among people with hypersexuality and those with low libido (16 in each group) and there is no marked difference in the proportion of people having experienced social stigma between the two types of libido disorders. In addition, slightly more people with low libido did not feel stigma (14) compared with those with hypersexuality (10).

Subsequently, CG Agent in charge of recovery responsible for monitoring patients at home on treatment compliance shares with us the patients' concerns.

> *"[...] one of the complaints we receive is the stigmatization that TB patients are subjected to in their entourage, and in places of care. We raise awareness but it is still not enough. I think that stigmatization can lead to a state of depression which can then affect the sexuality of sick people [...]."* ***[Extract from an interview with GC Recovery Agent, (40 years old)]***

The words of a doctor reinforce the previous statement in these terms;

> *"[...] I think it is more than important to raise awareness among tuberculosis patients under treatment about the potential sexual disorders that could occur so that they are no longer surprised because yes! We receive complaints. The most common side effects in these patients are fatigue and pain of all kinds and you agree with me that when you are really in pain, you can't even think about sex and never be in a sexual performance! Depression can indeed cause sexual disorders because it acts on the production of pleasure hormones. As for stigmatization, it is commonplace, it can cause sexual disorders by creating depression that could lead to ST. So I can say that the link is not direct [...]"* ***[Excerpt from an interview with TU Doctor, 34 years old]***

Both statements highlight the influence of social stigma on the psychological and sexual well-being of TB patients. On the one hand, GC shows that social stigma persists, and can lead to depressive states. On the other hand, doctor TU confirms that depression and physical pain related to treatment directly impact the ability of patients to maintain a normal sex life.

In summary, social stigma seems to act as an aggravating factor in the process of deterioration of mental and sexual health of tuberculosis patients, particularly by accentuating their emotional vulnerability. This situation shows the importance of intensifying awareness-raising efforts not only among patients, but also among their entourage, in order to reduce the impact of stigma.

4. Discussion of results

Depression is generally characterized by a symptomatic trio. These are mood disorders, psychomotor inhibition and somatic disorders. Psychomotor inhibition can singularly lead to difficulty concentrating, a disturbance of vital momentum and libido. Thus, the subject lacks energy for sexual activities. Moreover, he experiences difficulty in ensuring an erection capable of ensuring satisfactory coitus. Thus, the presence of erectile difficulty in a depressed patient is nothing new. What

is essential to note here is relative to the nature of depression and its links with tuberculosis. This is a reactive depression. It is secondary to the prolonged intake of anti-tuberculosis products. Depression maintains and amplifies sexual disorders in tuberculosis patients. The association of tuberculosis with depression raises the thorny question of psychosomatic disorders whose determinism is complex to demonstrate. The results of this research indicate a notable association between depressive syndrome and sexual dysfunction in tuberculosis patients. However, it is crucial to note that this association does not allow us to conclude a direct causal link between depression and sexual dysfunction. Other factors may also contribute to this relationship, such as anxiety, stress related to the disease, side effects of medications, and other pre-existing medical or psychological conditions.

Depression can have a significant impact on sexual health by affecting desire, erectile function, sexual satisfaction and intimate relationships of patients. Regarding the impact of this dysfunction on the patient's life, Garcia (2007) stated that when this disorder is prolonged, it turns into obsession, dismay, depression and anxiety, which will fuel and maintain failure. In addition, the impact of erectile dysfunction on the lives of individuals who suffer from it and on those around them can be too dramatic. In view of the harm of depression on the sexuality of couples. This researcher prohibits considering erectile dysfunction as a consequence of depression. They must be considered rightly to avoid trivializing the suffering of patients. Therefore, they must require the same attention from the medical profession as any other disorder. It should be noted that the underlying mechanisms of the links between depression and erectile dysfunction are complex and may involve biological, psychological and social factors. An integrated approach to mental and sexual health is therefore essential to understand and effectively treat sexual disorders in tuberculosis patients under treatment.

The complexity and influence of sexuality on self-image constitute a tangible reality that should not be trivialized. Erectile dysfunction or sexual dysfunction are generally poorly experienced by individuals who feel diminished or incomplete. Thus, apart from a significant burden on social relationships, tuberculosis contributes to the crumbling of self-esteem by limiting sexual abilities or skills. In a couple, the victim isolates himself or despises himself, because he feels that he is no longer the same person for the partner. The latter, even if he seems compressive, experiences this reality as a catastrophe. The victim, perceiving himself as incompetent, sometimes adopts attitudes that inhibit the partner's momentum. The inhibition of this momentum is considered by the victim as proof of his observations and apprehensions. The two partners then enter a vicious circle that becomes toxic for the couple's relationship and sexual fulfillment. Thus, the tuberculosis patient feels rejected by both his family and society. This leads to self-aggressive action which is manifested by non-compliance or delay in seeking care. This result from this research is consistent with the observations of Bergman and al, (2021). For these authors, the stigma of tuberculosis delays health care-seeking behavior. Therefore, in the context of the fight against tuberculosis, the stigma of tuberculosis is one of the main social determinants of health and contributes to worsening health inequalities. This is also the point of view of Naidu and al. (2020) who had

estimated that the association of depression and tuberculosis generates stigma for victims and who experience enormous difficulties in adapting to their toxic and suicidal social environment.

Furthermore, the idea that social stigma associated with TB patients leads to sexual dysfunction raises important questions about the impact of social factors on sexual health. The data presented suggest a correlation between stigma and sexual dysfunction in TB patients. However, it is essential to recognize that social stigma is a complex phenomenon that can have multiple impacts on individuals' mental and physical health. Social stigma can influence the sexual health of TB patients in a variety of ways, including affecting their self-esteem, causing psychological stress, impacting their intimate relationships, and limiting their access to health care. The mechanisms by which stigma leads to sexual dysfunction may vary depending on the social, cultural, and economic context in which patients find themselves.

CONCLUSION

Tuberculosis is, in this contemporary era, a major health concern. Its high prevalence and virulence are a source of concern for all societies. States and WHO indicate that tuberculosis is a factor that handicaps human development efforts. It disrupts the achievement of sustainable development goals in terms of health and population. It is in this context that studies on this pathology and its management have motivated numerous research studies in medical and social sciences. Our observations on the experience of tuberculosis patients in relation to sexual disorders have motivated interest in this research. The research is conducted with the aim of evaluating the links between the side effects of anti-tuberculosis treatment and sexual disorders in patients. This research therefore focuses on a dimension often neglected by health personnel and researchers. Erectile or sexual disorders in tuberculosis patients. To achieve this objective, fifty-four (54) patients undergoing anti-tuberculosis treatment were identified and selected using the sampling technique known as reasoned choice. Using the same technique, fifteen healthcare providers at the National Hospital and University Center for Pneumo-Phtisiology of Cotonou (CNHU-PPC) and two key players from ASSAP-TB were selected to better understand the management of sexual disorders concomitant with anti-tuberculosis treatments. These statistical units of different categories provided information that facilitates the understanding and description of this phenomenon. After processing the information from the different sources, it is noted that there is a high prevalence of sexual disorders among tuberculosis patients. This highlights the complexity of the interactions between physiological, psychological and social factors. The pharmacological effects of drugs, depression and social stigma combine to negatively affect sexual function (erectile dysfunction and desire disorder) and, by extension, the quality of life of patients. These results also indicate the urgency of multidisciplinary intervention in the treatment and management of tuberculosis and its consequences on life and its social environment. It is imperative that health professionals are sensitized and trained to recognize and treat sexual dysfunction associated with tuberculosis. Integrated care strategies, including medical, psychological and social interventions, must be developed and

implemented. Moreover, improving the quality of life of tuberculosis patients requires the recognition and adequate treatment of sexual dysfunction. It is essential to adopt a comprehensive approach that takes into account all aspects of patients' health. It should also be mentioned that it is crucial to develop strategies for monitoring and managing the side effects of anti-tuberculosis drugs that take into account the potential impact on patients' sexual health. This could include awareness-raising programs for patients and health professionals, as well as specific interventions aimed at preventing or mitigating sexual dysfunction associated with taking anti-tuberculosis drugs. It would be timely and beneficial for patients if health care providers systematically assessed patients' sexual health during their care.

Bibliographic references

1. Alemu, WG, & Zeleke, TA (2023). Prevalence of depression among people with tuberculosis in East Africa: A systematic review and meta-analysis. Science of there health African, 23(1), 231-240. https://doi.org/10.4314/ahs.v23i1.25
2. Aouam, K., Chaabane, A., Loussaïef, C., Romdhane, FB, Boughattas, N., and al., (2007). Adverse effects of antituberculosis drugs: Epidemiology, mechanisms and conduct has hold. Medicine And Diseases Infectious, 37(5), 253-261. https://doi.org/10.1016/j.medmal.2006.12.006
3. Araujo, AB, Durante, R., Feldman, HA, & Goldstein, I. (2009). The relationship between depressive symptoms and male erectile dysfunction: Cross-sectional results from the Massachusetts Male Aging Study. Psychosomatic Medicine, 61 (3), 231-237. https://doi.org/10.1097/PSY.0b013e3181a24f1c
4. Ashaba, C., Musoke, D., Wafula, S.T., & Konde-Lule, J. (2021). Stigma among tuberculosis patients and associated factors in urban slum populations in Uganda. African health science, 21(4), 1640–1650. https://doi.org/10.4314/ahs.v21i4.18
5. Bergman, A., McNabb, K., & Farley, J. E. (2021). A systematic review and psychometric evaluation of instruments measuring tuberculosis stigma in sub-Saharan Africa. Stigma Health . https://doi.org/10.1037/sah0000328
6. Brotto, L.A., Basson, R., & Luria, M. (2010). A mindfulness-based group psychoeducational intervention targeting sexual arousal disorder in women. The Journal of Sexual Medicine, 7 (9), 2011-2023. https://doi.org/10.1111/j.1743-6109.2010.01848.x
7. Camerlain, M. (2009). Arthritis is Enough . Arthritis Society. https://www.arthritis.ca
8. Farhat, S., Ikrou, H., Boutbagha, N., Essay, Y., Oulahbib, HAS., Imzil, HAS., and al., (2023). Assessment of therestigma And of there discrimination towards THE patients tuberculous At breast of the establishments of care. Review of the Diseases Respiratory News, 16(1),

290.https://www.em-consulte.com/article/1641043/evaluation-de-la-stigmatisation-et-de- la-discrimin

9. Garcia, V. (2007). Sexuality and depression in a couple. *Dialogue, 4* (178), 115-122.
10. Gordon, S. Mr., & Thomas, D. P. (2016). Antituberculous drug side effects and sexual dysfunction: A comprehensive review. Journal of Antimicrobial Chemotherapy, 71(3),715-723. https://doi.org/10.1093/jac/dkv414
11. Laforgue, E., Busnel, G., Lauzeille, D., Grall-Bronnec, Mr., Cabelguen, C., and al., (2022). Evolution of sexual functioning of men through treated and untreated depression. The Brain, 48(4), 383-389. https://doi.org/10.1016/j.encep.2021.06.008
12. Laumann, E.O., Paik, A., & Rosen, R.C. (1999). Sexual dysfunction in the United States: Prevalence and predictors. JAMA, 281 (6), 537-544. https://doi.org/10.1001/jama.281.6.537
13. Licitsyna, O., Ansseau, Mr., & Pitchot, W. (2011). Dysfunctions sexual And antidepressants.
14. The brain , *37* , 138-145. https://doi.org/10.1016/j.encep.2010.09.009
15. Lönnroth, K., Best, G. B., Abubakar, I., & Garcia-Basteiro, HAS. L. (2015). Tuberculosis control and elimination 2015–2050: 50 years of experience from tea global tuberculosis control program. Tea Lancet Respiratory Medicine , 3(5), 319-328. https://doi.org/10.1016/S2213-2600(15)00013-2
16. Naidu, T., Pillay, SR, Ramlall, S., Mthembu, SS, Padayatchi, N., and al. (2020). Major depression and stigma among people with multidrug-resistant tuberculosis in South Africa. American Journal of Tropical Medicine and Hygiene, 103 (3), 1067–1071. https://doi.org/10.4269/ajtmh.20-0343
17. World Health Organization. (2013). Global tuberculosis report . 2013 . https://apps.who.int/iris/bitstream/handle/10665/91355/9789241564656
18. World Health Organization. (2022). What is hindering the fight against tuberculosis in Africa? Regional Office for Africa. https://www.afro.who.int/en/news/what-is-hindering-the-fight-against-tuberculosis-in-africa
19. World Health Organization. (2023). Global tuberculosis report . https://www.who.int/en/news-room/fact-sheets/detail/tuberculosis
20. World Health Organization. (2018). Global Tuberculosis Report 2018. https://www.who.int/tb/publications/global_report/en/
21. Republic of Benin. (2020). Assessment of obstacles and shortcomings in the rights of vulnerable people in the response to the tuberculosis endemic in the Republic of Benin . Ministry of Health. https://www.stoptb.org/plan_daction_et_cadre_responsabilite_crg_tb_benin_2024-2026_version_revisee.pdf

22. Wen, Q., He, N., Xiao, X., Him, W. Y., Chu, D. S., and al., (2018). Actin nucleator Spire 1 is a regulator of ectoplasmic specialization in tea testis. Cell death & disease, *9* (2), 208. https://doi.org/10.1038/s41419-017-0201-6

Painting I : Synthesis tools and technique of collection of data

Techniques of collection of Data	Tools of collections of Data	Targets
• **Administration of questionnaire and of scale ;**	• Questionnaires investigation • Quizstandardized (The international index of the function erectile (IIEF), • The scale of depression of Beck ;	56 Tuberculosis patients undertreatment
Interview semi-directional	• Guide maintenance	20 Providers of care assistants social And membersASSAP-TB

Source : Data from the field_ January_ March 2024

Table II: Distribution of participants by gender

SEX		
	Effective	Percentage
Male	56	100.0%

Source : Data from the field_ January_ March 2024.

Painting III: Level instruction, situation matrimonial And Status professional of the patients.

Categories	Variables	Effective	Percentage (%)
Level instruction	Studies superior	4	7.14
	BAC	13	23.21
	BEPC	18	32.14
	CEP	21	37.5
Situation matrimonial	Bachelor	18	32.14
	Widower	11	19.64
	In couple	13	23.21
	Divorce	14	25.00
Status professional	Artisan	22	39.93
	Entrepreneur	19	33.93
	Official of state	15	26.79

Source : Data from the field_ January_ March 2024.

Table IV: Erectile dysfunction as a function of depressive syndrome

		Erectile Dysfunction		
		Presence of erectile dysfunction	Absence of erectile dysfunction	Total
Depressive Syndrome	Presence	26	18	44
	Absence	4	8	12
Total		30	26	56

Source : Data from the field_ January_ March 2024.

Table V: Correlation between depressive syndrome and decreased libido

		Libido Disorders		
		Hypersexuality	Decreased Libido	Total
Depressive Syndrome	Presence	18	26	44
	Absence	8	4	12
Total		26	30	56

Source : Data from the field_ January_ March 2024.

Table VI: Relationship between stigma/n and erectile dysfunction

		Erectile Dysfunction		
		Presence of erectile dysfunction	Absence of erectile dysfunction	Total
Experience of social stigma	Yes	16	16	32
	No	14	10	24
Total		30	26	56

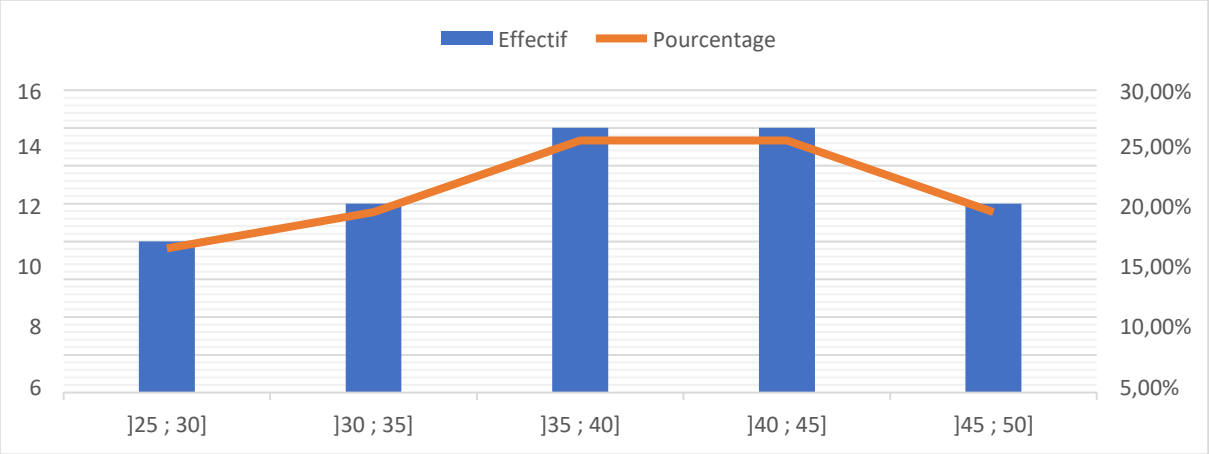
Source : Data from the field_ January_ March 2024.

Table VII: Interaction between Experience of social stigma and decreased libido

		Libido Disorders		
		Hypersexuality	Decreased Libido	Total
Experience of social stigma	Yes	16	16	32
	No	10	14	24
Total		26	30	56

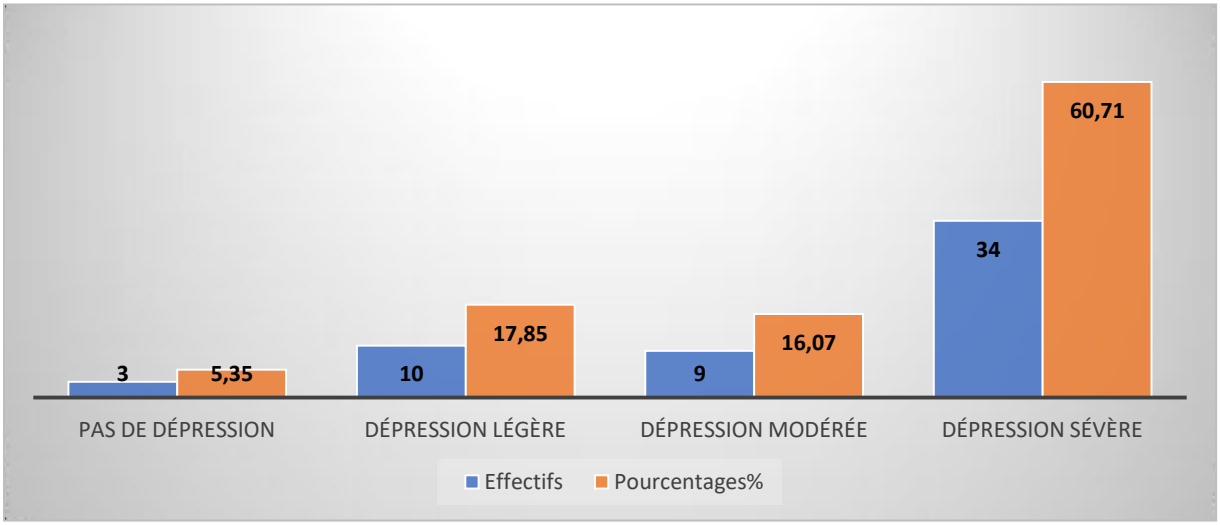
Source : Data from the field_ January_ March 2024.

Figure 1 : Distribution of the participants by slice of age



Source : Data from the field_ January_ March 2024.

Figure 2 : Levels of depression of the patients according to the scale of Beck



Source : Data from the field_ January_ March 2024.