

*A Collaborative Care Model to manage the comorbidity
of depression and chronic non-communicable diseases
in Rwanda*

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Introduction and Background

- The comorbidity of depression and chronic NCDs is a current major global health concern (1-3)
- A world survey of 60 countries done by World Health Organization (WHO) revealed that an average of between 9.3% and 23% of participants with one or more chronic physical disease had depression as well (4).
- The American Heart Association (5) reports that depression was found to co-occur in 17% of cardiovascular cases, 23% of cerebrovascular cases, 27% of diabetes patients and more than 40% of individuals with cancer (5) .
- Collaborative care model (CCM) is a Model used by a team of medical and mental health professionals to provide holistic and evidence based care to people with chronic physical health problems and depression in primary health care setting (6-8). This model is also recommended by WHO to be used to manage this co-morbidity.

- Different studies have studied and confirmed the effectiveness of this model to manage this co morbidity .
- Among these studies the ***‘Improving Mood-Promoting Access to Collaborative Treatment’*** (IMPACT) Model comes in the first place.
- This model was implemented in the USA (7). It was run over 20 sites and concentrated on depression in people over the age of 60 years with co morbidity of chronic medical disorder
- Other studies which have confirmed the effectiveness of collaborative care model in managing the co morbidity of depression and chronic NCDs include:
 - *Minnesota - Diamond Project implemented by Unutzer in 2009 in the USA(9);*
 - *The Pathways Study implemented in the USA(10) ;*
 - *SMaRT oncology- 1 implemented in UK (11) ;*
 - *Collaborative care for depression in UK primary care: a randomized controlled trial implemented in UK (12) .*

- The CCM is also recommended by World Health Organization (WHO) to be implemented by all countries to manage this co morbidity (13).
- Despite this recommendation , a number of countries, particularly low income countries still separate mental health care from physical care (14).
- This separate treatment of this co morbidity has been linked to many negative health effects including complex medication regimens with high risk of drug interactions and poor medication adherence; duplicative medical tests, unnecessary hospitalizations and worsening mortality as stated by different authors (6, 8, 15).

Research problem

- Despite the recommendation of WHO to implement the CCM to manage the co-morbidity of depression and chronic NCDs; a number of countries, particularly low income countries still separate mental health care from physical care.
- This separate treatment is linked to many negative health effects as stated in the previous slide
- The estimated co morbidity of depression with chronic NCDs in Rwanda **among diabetic and hypertensive patients is estimated to be 27% and 29% respectively (16)**. Despite this estimated prevalence of this co morbidity, there are no formal or recognized interventions to collaboratively manage this health problem. Though the motivation to adapt the CCM to the Rwandan context.

Objectives

Main Objective : Adapt the CCM to the Rwandan context to manage the comorbidity of depression and chronic NCDs

Specific objectives

1. Review the existing CCM
2. Adapt CCM to the Rwandan context
3. Test the adapted CCM in one district Hospital
4. Evaluate the applicability and acceptability of the adapted CCM

Literature review

- The reviewed literature covered the following main topics:
- Review of the existing CCM
- Studies which have implemented the CCM in different countries (ex: Impact Model)
- Methods of model adaptation

Methodology

- **Research design** : Action research with mixed method-sequential explanatory design was used in the larger study.
- **Model analysis and review** : The existing CCM was analysed/reviewed using the four constructs of the ResQue evaluation framework described by Pu et al. (2011): user perceived qualities, user beliefs, user attitudes, and behaviour intentions.
- **For Model adaptation**: the research-practice partnership method was used
- **Research team**: A research team composed by 14 health care professionals including 2 psychiatrists, 3 Medical Doctors, 3 Chief Nurses, 3 Registered nurses, 3 mental health nurses

The process of adaptation: the iterative process was used during the adaptation

The following are the steps followed during adaptation of existing CCM to the Rwandan context:

- *Reviewing the existing model*
- *Identification of potential key components of the existing model*
- *Mapping data for the new model*
- *Designing a draft adapted model*
- *Discussing the draft model*
- *Redrafting of the model*
- *Resting the model and*
- *Evaluating the model.*

Model testing: the adapted model was implemented in one district Hospital over a period of 12 weeks on 30 patients.

- Patients were chosen none purposively conveniently
- The implementers (collaborative care team of four health care professionals) were members of the research team working at the selected Hospital.

Evaluation: A semi-structured interview guide was used to explore the applicability and acceptability of the model. **Qualitative content analysis with inductive approach** was used to analyse qualitative data.

Results

1. CCM model analysis and review

- After reviewing the existing CCM, its importance and cost-effectiveness in managing the comorbid tidy of depression and Chronic NCds; all participants confirmed its importance in the Rwandan context.

2. Adaptation of existing CCM to the Rwandan context

- **Adaptation team : 14 health care professionals (Table 1)**
- **Adaptation elements :** Practice setting, Target population; the collaborative care team, Collaborative care aspects & principles (*Population based-care; Measurement based-care and Stepped-care*)
- **Collaborative care interventions** (*coordination and care management; regular/proactive monitoring ; treatment to target population ;Monitoring of Patient's progress; Regular consultation of patients not showing improvement*)

TABLE 1: Teaching team

Participant code	Gender	Position	Institution	Experience
01	Male	Psychiatrist	Psychiatric referral Hospital	13 years
02	Male	Psychiatrist	Ministry of Health	10 years
03	Male	Medical Doctor	Hospital no 1	5 years
04	Male	Medical Doctor	Hospital no 2	6 years
05	Male	Medical Doctor	Hospital no 3	3 years
06	Female	Chief Nurse	Hospital no 1	4 years
07	Female	Chief nurse	Hospital no 2	6 years
08	Female	Chief Nurse	Hospital no 3	8 years
09	Female	Registered Nurse	Hospital no 1	3 years
10	Female	Registered Nurse	Hospital no 2	6 years
11	Female	Registered Nurse	Hospital no 3	4 years
12	Female	Mental Health Nurse	Hospital no 1	6 years
13	Female	Mental Health Nurse	Hospital no 2	8 years
14	Female	Mental Health Nurse	Hospital no 3	4 years

- ***Collaborative care components :***
 - ✓ *the regular monitoring of depression;*
 - ✓ *the systematic patient's follow up ;*
 - ✓ *the treatment intensification for patients who do not improve;*
 - ✓ *the relapse prevention;*
 - ✓ *patient's education and community involvement,*
 - ✓ *scheduled regular psychiatrist supervision and monthly reports of overall progress of each patients were adapted*
- **Collaborative Care outcomes:** Improvement of depression symptoms; response to treatment; remission and recovery; Adherence to treatment, Improvement of quality of life and functional status and Patient satisfaction)

Testing of the adapted model

- The adapted model was tested over period of 12 weeks on 30 patients.
- Implementers : Research team members from the hospital

Applicability of the adapted model and its importance based on short outcomes of CCM

- The implementers confirmed that the model was applicable in terms of Human resources; materials and infrastructures.

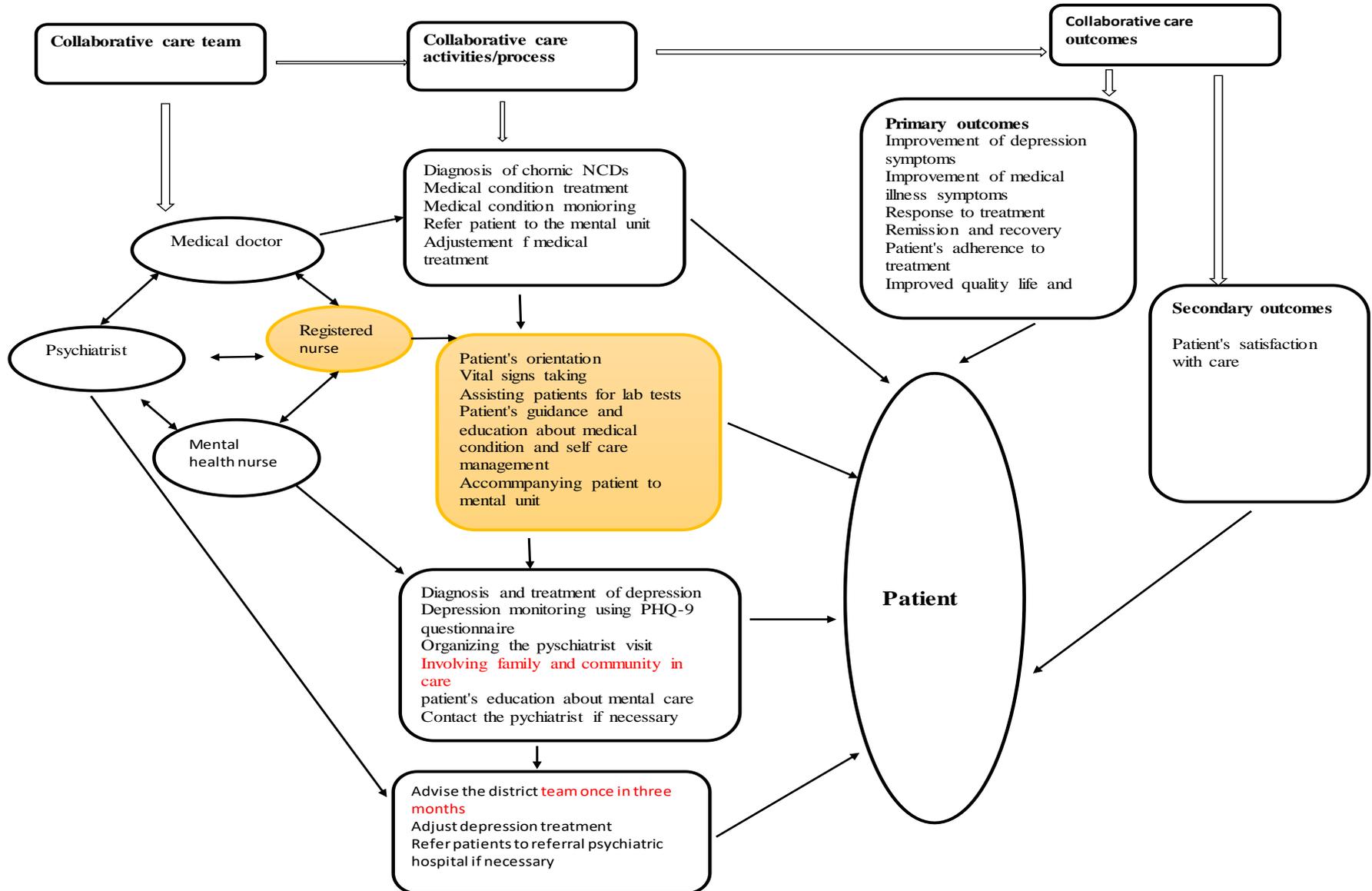
Acceptance by clients:

- The implementers confirmed that the model was very well accepted by clients because of the following reasons: (a) all patients completed all sessions; (b) patients' wishes to continue the model; short outcomes of CCM expressed by clients including improvement of depression symptoms.

Participants' opinions about importance of the model

- Implementers have categorized importance of CCM in five categories: **Personalized care, improvement and less drugs, reduction of attendances and emergency admissions and reduction of depression symptoms.**

New adapted CCM to the Rwandan context



Discussion

- The CCM review and analysis was done using the four constructs of the ResQue evaluation framework described by Pu and colleagues (18): user perceived qualities, user beliefs, user attitudes, and behaviour intentions.
- All elements of the initial CCM as described by different authors (5-7) have been adapted to the CCM adapted to Rwandan context except for the collaborative care team.
- For the team the initial CCM only utilizes three members : A case manager, A primary health care provider and a psychiatrist; in the adapted CCM the 4th member: a registered nurse was added. This will play a role of patient's guidance; education; medical condition check up and referring the patient the Medical Doctor if necessary.

- They are also other studies which have recommended the additional health care professional to the three collaborative care team as a fourth member (17)
- The applicability and acceptability of the adapted CCM to Rwandan context are in accordance with other findings from different authors who also confirmed the applicability , acceptability and effectiveness of this model(5-7)

Conclusion

Basing on the World Health Organization recommendation to implement the CCM to manage the co morbidity of depression and chronic NCDs we recommend:

- The health care providers to implement this new adapted model in district hospitals for better management and life improvement of patients with this co-morbidity.
- The results from this study promote one of the Sustainable Development goals from better health which is to combat different diseases including chronic non-communicable diseases.

THANK YOU



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