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The perceptions of the uses of laxatives by women in the rural village of Kanana, Rustenburg South Africa: a mixed study

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Abstract

Introduction: *laxatives are the most populous, constipation relief, and over-the-counter (OTC)-self-medication and have been perceived for other purposes. This study, therefore, aimed to gain insight into the perception of the uses of laxatives by women in a low-income setting in South Africa. Since laxative use is private and therefore 'secret', we do not know why people use them in Rustenburg.* ***Methods:*** *the study used the exploratory qualitative method to explore the perception of the uses of laxatives among the adult population of Kanana village, Rustenburg South Africa from June to August 2008. For the quantitative, a short survey was administered to 801 participants who were 16 years and above. The study also used one woman each from the 210 households to characterize the use of laxatives. To extract the reason why women, use laxatives until saturation. Of these 210 women, 50 were used for the ID interviews until saturation was reached. The anthropological approach was thematic (transcribed, translated, and coded) used to analyze the socio-cultural diverse perceptions and of the uses of laxatives by women.* ***Results:*** *out of the 801 people surveyed in 210 households, 58% (466) were females and the majority were 40 years and above. Fifty percent of the house households surveyed had no formal education, and Setswana (92%) was the most spoken language. Out of the 210 women surveyed for laxative uptake: 62% (130) had made use of at least three of the laxative brands reported. Relative to the frequency of usage: 68% (89) once a month. From the qualitative component: the most common emerging themes with respect to the perception of OTC laxative uses were; cleaning of the body, cleaning of the blood, preparing the body for a new season (from summer to winter and vice versa), prevention of flu, increase appetite for food and enhancing of sexual performance.* ***Conclusion:*** *the study indicated diverse perceptions of the rationale for OTC-self-prescription of laxatives by women in a low-income setting. These limitations which are not yet medically explored, prompt the need to intensify education and awareness on the pharmacological and clinical uses of OTC-self-prescribing of laxatives.*

Introduction

Laxatives have been indicated as standard drugs frequently used to relieve constipation-a gastrointestinal disorder although not well-defined, usually associated with difficulties in passing out stool. According to a report by [1,2], constipation is a bowel abdominal movement discomfort including frequent straining of hard and lumpy stooling. The epidemiology of constipation differs in different settings increases with age and is three times more likely in women than men [3,4]. According to other findings [5], constipation is more frequent among people 65 years and above and increases to 26% (men) and 34% (women) among those from the age of 84 years and older [5]. In South Africa, the burden of constipation is estimated at 29% popular among the elderly [6]. The disease is linked to poor caloric and dietary intake (fiber), fluid, and impaired health quality of life associated with multifactorial comorbidity disorders such as psychological, metabolic, gastrointestinal, and neurological disorders [7,8]. According to reports by Turawa *et al* and Wessel-Cessieux *et al* [2,4], adequate high-fiber diet and fluid intake are customarily encouraged as the first line of prevention, although laxatives are the generally clinical pharmacologic prescription remedies for relaxing and relieving constipation. In addition, since multiple risk factors and comorbidities of constipation vary, a step-wise cascade from non-pharmacological treatment to complex pharmacological-laxatives management is required to avoid unnecessary therapies [4].

Laxatives are pharmacological therapies that form part of the over-the-counter (OTC) medicines which are widely available in most societies to relieve constipation [6,9,10]. They are found in pharmacies, supermarkets, and local shops [11,12]. In South Africa, the distribution of

OTC-laxative medicines is indicated for mild illnesses which can be diagnosed and treated without the help of a medical practitioner [11]. Laxatives are used for the relief of constipation in European countries, the UK, Belgium, and the Netherlands with an estimated 17% of the population suffering from constipation whilst in the US an estimated 2%-27% of the population suffers from constipation [13]. The challenge with OTC-laxative medicines is that they might not be controlled by medical professionals when being used in private. A literature review by Berry and Christopher (2021) indicates that laxatives are widely available without prescription and, as a consequence, they are commonly used for self-management of constipation by community-dwelling adults. However, it is not clear to what extent laxatives are used [13]. Apart from OTC laxatives, in South Africa traditional laxatives are commonly used by the locals and extracted from various plants [10]. More to that, according to the systematic review conducted by [2] there are no specific studies describing the perception and the behavior or the uses of OTC-laxatives in a rural South African setting. We thought it would be interesting to envisage why people take OTC-laxative medications for future research. The study, therefore, assesses the perception of the uses of OTC-laxatives among women in a rural South African setting in Rustenburg.

Methods

Study design: the study used qualitative and quantitative approaches. The quantitative approach was used to estimate the number of women who use OTC-laxatives. The qualitative component was based on semi-structured interviews to draw insights aimed at understanding the in-depth complex reasons regarding the uptake and uses of laxatives by women in a rural setting.

Conceptual framework: a theoretical framework provides a structure and guidance on how the study should be conducted and considerations during research. The theoretical framework of this study was drawn from different theories to assist in understanding different facets of the use of laxatives by women in a rural context. Social cognitive theory is based on the concept that learning is affected by cognitive, behavioral, and environmental factors [14]. Bandura indicated that learning phenomena can occur by observing other people´s behaviors. The role of observation and modelling in learning behaviour is emphasised by the theory. In this study, most women learned about using laxatives from seeing their parents and relatives use laxatives. This type of behavior was modeled later in the years as the women grew older and started using laxatives (Figure 1).

Study population: the study population was made up of women of childbearing age of 16 years and older. The participants were from different tribes of South Africa and must have been residents of Kanana village for 5 years and above.

Study setting: the study took place in Kanana village, a low-income resource setting of South Africa. The village is twenty minutes´ drive from the town of Rustenburg of the main towns of North West Provence of South Africa. The population of Kanana village is estimated at 10907 as of the 2011 census and is composed of more than five small sectional zones [15]. The village is mostly governed by the Royal Bafokeng Administration (RBA) which is situated in Phokeng village.

Study sampling: for the quantitative, a short survey was administered to 801 participants who were 16 years and above. The study also used one woman each from the 210 households to characterize the use of laxatives. Of these 210 women, 50 were used for the ID interviews until saturation was reached. Women who resided in Kanana village for less than 5 years were not included in the study. For the qualitative data, we used the snowballing methodology to recruit participating women for the in-depth interviews (IDIs). The IDIs were conducted by trained interviewers which lasted approximately 30

minutes according to this study, 35 subsectional units were mapped from the 5 sectional zones for the quantitative study. A random selection of 6 sub-section zones was used to recruit participants from households to participate in a short interviewer-led survey of 45 minutes. All the interviewers were trained on the data collection tools for a week before the pilot study. Both verbal and audio recording consent were obtained from the study participants before the commencement of the study. The study was approved by the University of Johannesburg Higher Degrees Committee-ethical clearance.

Sample size: the quantitative sample size was not estimated at the time of data collection. However, 801 participants responded to the survey. We used these 801 participants to determine the error margin of the study at 95% and alpha of 5%. To estimate whether the 801 conservative sample was able to detect a different at power of 80% and an effect size of 0.5. This resulted in a difference of ±0.0494 or 5% good enough to describe the socio-demographic characteristics of household composition.

Data collection methods: before collecting data for the study, exploratory research was conducted in Kanana village. The snowballing method was used to identify participants to participate in the exploratory study. The researcher spent two weeks in Kanana village exploring the uses of laxatives during which 20 participants engaged in unstructured interviews to explore uses of laxatives. It emerged that laxatives were regularly used to clean the body. The results from the exploratory study informed the quantitative study survey. For the quantitative, a short survey was administered to 801 participants who were 16 years and above from 210 households. The study also used one woman each from the 210 households to characterize the use of laxatives. Of these 210 women, 50 were used for the ID interviews until saturation was reached. Inform consents were administered to all parents and assent from those who were 16-17 years while those from 18 years old freely consented to the study. The consents included the hard paper and the voice recording data collection. The data was collected from the participants either in their rooms or quiet places away from the house. Most of the houses have big yards conducive for both qualitative and quantitative data collection procedures. The participants were asked to respond to/or refuse to any of the South African languages of which they were comfortable. The data was collected between July-September 2008. Before commencing all the interviews, the OTC-laxatives study was properly defined to the participants as medicines that are used for the relief of occasional constipation in all the native languages spoken in the village. Furthermore, participants were asked to explain their understanding of laxatives. This was used to properly shape the definition to align with the South African OTC-self-medication, laxatives. According to the 2018 South African regulation for self-medication or OTC-prescription-laxatives fall in schedule 0 and 1/2 as indicated [16].

Data analysis: for the qualitative study the information captured on the hard copies were used to identify some of the emerging themes. While the voice recording was transcribed and translated into English. The themes from both paper hard copies and voice recordings were compared. The main themes were generated and reported accordingly. The quantitative data was captured in Excel by trained data capturers and the data was imported into SPSS version 15 for analysis. The quantitative variables were categorical. The proportions and frequencies were used to describe the data.

Results

Table 1 describes the socio-demographic characteristics of household composition. Out of the 801 people surveyed in 210 households: 42% (335) were males and 58% (466) females between the ages of 16 and 44 years and the majority were 40 years and above (60%, n= 484). The most common and spoken languages were: Setswana

(92%), Sesotho (3%), and others (5%). The majority of the house households had no formal education (51%), followed by secondary education (33%) and primary education (15%).

Table 2 shows the disaggregation of women who used laxatives. Of the 210 participants who completed the survey, 62% (130) use laxatives. Three brands of laxatives were reported as the most commonly used in Kanana village. Of the 62% of women who reported using laxatives: 88% make use of one brand, 87% the second and 67% the third brand respectively. Relative to the frequency of usage: 68% (89) once a month, 11% (14) twice a month, and 21% (27) more than 3 times a month. From the qualitative component: the most common emerging themes with respect to the perception of OTC laxative-uses were; cleaning of the body, cleaning of the blood, preparing the body for a new season (from summer to winter and vice versa), prevention of flu, increase appetite for food and enhancing of sexual performance.

Cleaning of the body: cleaning the digestive system has been found useful when preparing the body for colonoscopy and abdominal surgery [17,18]. In these instances, laxatives are used in clinically controlled environments where healthcare workers provide the required dosage and monitor the patients. Participants in this study reported that they used laxatives to clean the body. It was understood by some respondents that the stomach should be cleaned regularly. One participant indicated that ' *cleaning the stomach with laxatives removes dirt from the body*' (participant 1). Furthermore, another respondent reported that '*if the stomach is dirty, it can cause illnesses and disturb a person's daily activities*' (participant 35). Cleaning the stomach was likened to servicing the body as can be observed from a comment made by a participant, '*we take our cars for a service and the same is required for the body..it needs to be serviced regularly*' (participant 38). In addition, one participant reported, '*a person's life is controlled by how the stomach works*' (participant 4).

In addition to regularly cleaning the body, some participants reported the importance of '*preparing the body for a new season*'. Environmental factors can have a direct effect on human health. Climate change is expected to increase the global burden of diarrheal diseases [19]. Furthermore, seasonal weather changes have been found to alter cognitive brain function in human beings with maximum and minimum brain functions observed in summer and winter, respectively [20]. Some participants in this study have reported that laxatives are used to prepare the body for a new season and that temperature is an immune regulator that controls how the body functions when exposed to different weather conditions. The seasonal transition from winter to summer is seen as a crucial time that affects the functioning of the body. For a new season, it was reported that laxatives had to be taken to prepare the body. A respondent indicated that '*summer is the most dangerous season because it brings heat and laxatives should be taken to prepare the body for the season*' (participant 8). Another participant indicated that 'laxatives should be taken at the end of winter to prepare for a new season' (participant 27).

Cleaning of the body '*gala*: ' although there is no supporting evidence of literature on '*gala*' in Setswana is understood as an illness that is caused when there is an accumulation of toxins and dirt in the body and this is mainly caused by certain foods such as junk food, fizzy drinks, alcohol, and some traditional Tswana foods i.e. *morogo* (wild spinach) and *bogobe ba ting* (sour porridge). Four different types of the gala were mentioned: white/clear, yellow, green, and black and the colors range from least dangerous to fatal type. This can be placed into the category of natural cause of illness [21]. The participants reported that laxatives could be used as preventive or curative methods of removing '*gala*'. A participant reported, '*the stomach is cleaned with laxatives so that gala can be properly removed*' (participant 45), and similarly another stated that, '*laxatives are used to remove gala*' (participant 6). Some of

the participants cautioned against using laxatives when a person was experiencing symptoms associated with '*gala*' such as nausea, vomiting, diarrhea, and fever because they believe that laxatives could worsen "*gala*" conditions.

Preventing the flu: studies show that the flu vaccine can reduce the severity of flu [22,23]. With regards to flu prevention, some of the participants believed that having flu is a sign of body dysfunction. Using laxatives to prevent flu was one of the common preventive methods of flu in this village. A respondent explained, '*when I take laxatives … freshen salts it stops me from getting flu*' (participant 11). Another participant reported that '*taking laxatives helps me to reduce the severity of flu*' (participant 17).

Cleaning the blood: blood being an oxygen carrier and carbon dioxide regulator that transports nutrients to the cells is an important part of human health and fighting diseases some women indicated that they used laxatives to clean their blood. Furthermore, blood protects against inflammation and it regulates the body's pH balance [24]. In this study, some participants reported using laxatives to clean the blood. For example, it was reported that '*laxatives work in the blood to clean it*' (participant 18). Another participant explained that '*it is important to clean the blood because without laxatives the blood can carry diseases*' (participant 10).

Increasing the appetite for food: appetite which is the desire for food and drinks [25]. However, appetite stimulants are a group of agents used in the treatment of decreased appetite and troublesome weight loss [26]. Different types of appetite stimulants can be used to address eating disorders, in malnourished elderly patients and unintended weight loss [27,28]. In terms of appetite and salivation, most of the participants thought that laxatives enhance food intake. A participant reported that '*loss of appetite is a sign that your digestive system is unclean´* (participant 12). Furthermore, another respondent explained, '*I use laxatives when I don't feel like myself… when I'm not active and when I get thirsty all the time and also when my appetite is low´* (participant 30).

Enhancing sexual performance: sexual dysfunction refers to a problem that arises during sexual performance [29]. Different therapies, techniques, and drugs are used to deal with sexual dysfunction among men and women [30]. Regarding sexual performance, several participants believed that a man could enhance his sexual performance by taking laxatives. For instance, a respondent reported, '*I buy motsosa poo* (one that wakes the bull) *a type of laxative for my boyfriend to increase his stamina during sex*' (participant 23).

Discussion

Our findings identified 6 major themes: cleaning of the body, cleaning of the blood, preparing the body for a new season (from summer to winter and vice versa), prevention of flu, increasing appetite for food, and enhancement of sexual performance. The participants believed that cleaning the internal body using laxatives was an effective way of keeping the body clean and in balance. '*Gala*' (all participants described gala as a multifaceted illness that presents itself when the body has exaggerated toxins in the body system) was described as an important sickness that people experience when their bodies are out of balance and may present with symptoms. This sickness is believed to be caused by food, an individual's susceptibility to imbalance, and even seasonal changes. It should be noted that health and illness can be socially constructed and Conrad and Baker describe it by stating that, 'certain illnesses have particular social or cultural meanings attributed to them' [31]. In contrast, Petersen and Benishek state that, '…illness is a socially constructed man-made artificial phenomenon, yet it is involved with cognitive society. As the disease (medical paradigm) and beliefs change, the construction also changes [32]. Illness can be seen as a personal construct with a cultural influence. Laxatives as reported to prevent

the flu, because it is understood that by removing the contents of the stomach the flu would also be reduced. Cleaning the blood was viewed as an important practice because the majority of the women believed that blood enhances organ functions and therefore should be kept clean at all times.

According to Ngcobo *et al.* some African traditions use herbs to clean the blood and organs [33]. In the case of Kanana women, laxatives form part of the herbal medicines used for the purification of blood. Participants who used laxatives to increase their appetite for food believed that it is not healthy for a person to lose their appetite. Evidence of laxatives being used as appetite stimulants could not be attained. Enhancing sexual performance was only attributed to males whereby the women bought laxatives for their partners. A category of laxatives that are manufactured specifically for black people are used for this function. These are given names that attract the user, and they are marketed in vernacular for example, *motsosa*poo (one that wakes the bull), *umadludlula/masututsa* (rigorously remove something), and *ukuqinisa umndeni* (to strengthen the family). It is important to note that this category of laxatives is aimed at addressing issues such as digestive problems, joint and back pain, gum disease, and erectile dysfunction. In South Africa OTC medications are classified as schedule 0 medicines which are available in supermarkets and are available to anyone without any professional involvement [34] and schedule 1 or 2 OTC-laxatives are found in pharmacies which can be obtained without the need or assistance of a pharmacist. This may encourage unintended misuse of these OTCs-laxatives by the end user-consumer. As can be seen in this study, laxatives were used for reasons other than intended use [34]. In terms of limitation, the study included only women of childbearing age on the uses and perception of laxatives 16-44 years of age. Similarly, information on how, when, and why men use laxatives was not reported.

Limitations of the study: this qualitative research explores the depth rather than the breadth of the use of laxatives-providing rich insights into individuals' experiences. It does not capture the full range of factors influencing laxative use. Therefore, future study is to develop a randomized control trial of quantitative with follow-up studies, using both mixed research approaches that will enable us to gain a more comprehensive understanding of laxative use and its implications.

Reflexivity statement and bias: the researcher and data collectors are familiar with Kanana village and speak Setswana which is largely spoken in Kanana. As researchers, our experiences and knowledge of the use of laxatives to clean the body should be noted. The research was conducted from an anthropology-at-home perspective which provides the researcher with a self-reflexive perspective and self-awareness. Bias was addressed through triangulating data by collecting exploratory data, and quantitative and qualitative data. The exploratory data suggested that women in Kanana village used laxatives. Quantitative data (large sample) provided an overview of the extent to which laxatives were used while qualitative provided a further understanding of the reasons behind the use of laxatives.

Conclusion

Laxatives were regularly used by the study participants for various reasons. The socio-cultural influences were evident in the different uses of laxatives. The study indicated the various perspectives and the rationale of the OTC-self-prescription of laxatives by women. These limitations which are not yet medically explored, prompt the need to intensify education and awareness on the pharmacological and clinical uses of OTC-self-prescribing of laxatives. Additional, research including longitudinal studies in more villages is required to understand the biomedical and clinical uses of laxatives from the socio-cultural influences and perspective.

Furthermore, regulations on OTC medicines such as laxatives need to be revised. Regulation of schedules 0 and 1 or 2 OTC medicines should be strengthened to allow consumers to receive information on the correct uses and potential risks of OTC self-prescribing medicines.

Disclaimer: the views expressed in this article are the authors' own not any institution. This study is part of the corresponding author's (Mahuma TM) master thesis that was conducted at the University of Johannesburg, South Africa for the award of MA in anthropology.

What is known about this topic

- *Laxatives are over-the-counter (OTC) drugs;*
- *Perceptions of laxatives in weight loss have been described;*
- *A comprehensive literature review of laxative use in the community has been described.*

What this study adds

- *Mixed methods in expanding evidence base, why women embark on the uptake and use of laxatives, is limited;*
- *The utilization of laxatives in a rural area setting such as Kanana village has not been documented;*
- *Current perspectives are needed for further research on why women in particular engage in OTC in South Africa.*

Competing interests

The authors declare no competing interests.

Authors' contributions

Tshepo Marea Mahuma conducted the research under the supervision of Thea de Wet. Tshepo Marea Mahuma and Clarence Suh Yah reviewed the research, and the data and wrote the draft manuscript. Tshepo Marea Mahuma, Thea de Wet, and Clarence Suh Yah reviewed the final draft. All the authors have read, approved, and consented to the final manuscript.

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Tables and figure

Table 1: socio-demographic characteristics of Household composition

Table 2: characterization of women's use of OTC-laxatives

Figure 1: adapted from Wood and Bandura, 1989: the conceptual model of factors contributing to the perceptions and the uses of laxatives by women in the rural village of Kanana, Rustenburg, South Africa

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Table 1: socio-demographic characteristics of household composition		
Variable	**N (801)**	**Percentage**
Gender		
Male	335	41.8
Female	466	58.2
Age		
16-19	64	8.0
20-24	70	8.7
25-30	82	10.2
31-35	68	8.5
36-39	33	4.1
40>	484	60.4
Language		
Setswana	739	92.3
SeSotho	25	3.1
Other	37	4.6
Highest level of education		
Primary school	120	15.0
Secondary school	262	32.7
Post-grade 12 qualification	11	1.4
None	408	50.9
Place of origin		
North West Province	611	76.3
Gauteng Province	11	1.4
Other	179	22.3

Table 2: characterization of women's use of OTC-laxatives		
Variables	**N(210)**	**Percentage**
Use of laxatives (N=210)		
Yes	130	62
No	80	38
***Types of laxatives**		
Type 1	114	88
Type 2	113	87
Type 3	79	61
ǂOften use of laxatives (n=130)		
Once a month	89	68
Twice a month	14	11
≥3 months	27	21
Note: *= multiple responses, ǂ=n=130		

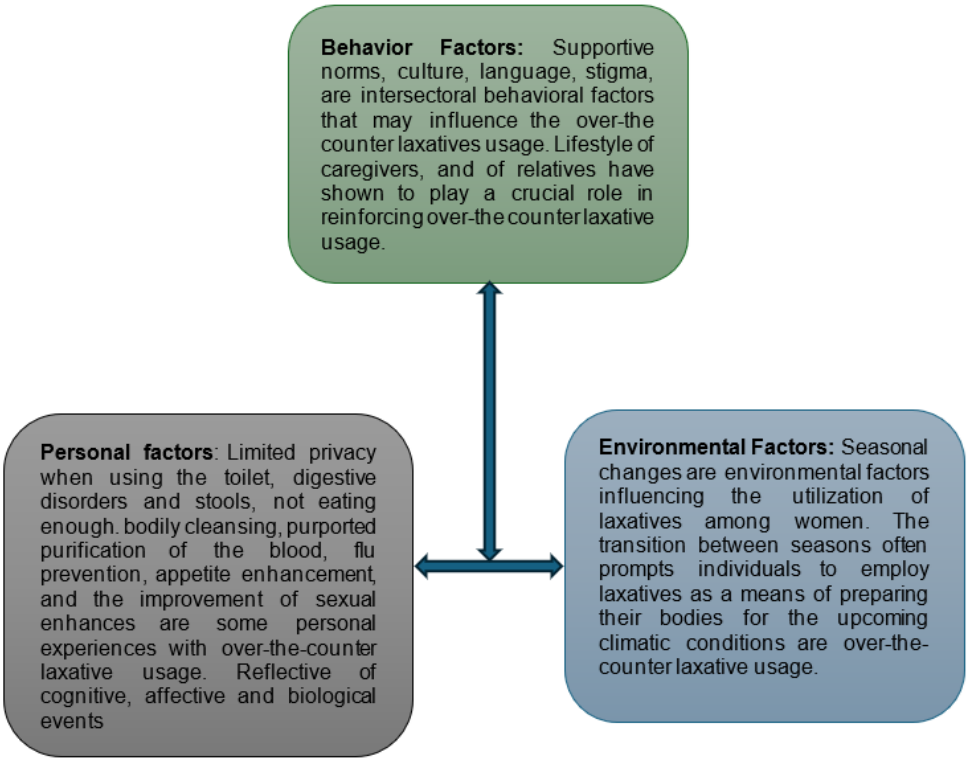

Figure 1: adapted from Wood and Bandura, 1989: the conceptual model of factors contributing to the perceptions and the uses of laxatives by women in the rural village of Kanana, Rustenburg, South Africa