



CONSTIPATION IN ELDERLY PATIENTS ATTENDING A POLYCLINIC

P J Meiring, G Joubert

Objective. To determine the prevalence of and risk factors for constipation in the elderly. Differences between the white and black elderly populations in this regard were examined.

Design. Cross-section hospital-based study.

Setting. The family medicine clinics at National and Pelonomi hospitals in greater Bloemfontein.

Participants. 179 white and 188 black patients, born before 1930, visiting the clinics during December and January 1994/95 and seen by one doctor.

Main outcome measures. Constipation.

Results. In both the black and white population groups 29% of the participants were constipated according to the definition used in this study. Depression was a risk factor for constipation in both population groups. Age over 80 years was a risk factor in the black participants. The fibre and fluid contents of participants' diets were not found to be associated with constipation. Pain during defaecation was positively associated with constipation. Forty-three per cent of the white and 76.6% of the black participants used laxatives. Of the white and black laxative users 14.3% and 21.5%, respectively, used more than one laxative at a time.

Conclusion. The prevalence of constipation was high in both groups. Laxative use and abuse are very common in the black elderly population.

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Complaints about their bowels and bowel movements are common among elderly patients visiting general practices. Donald¹ found in a 1982 study in Edinburgh that 23% of the elderly population (born before 1 September 1912) complained about constipation, in comparison with 8% of the younger group. Immobility and depression were identified as risk factors for constipation;^{1,3} other studies indicated that further risk factors were female sex⁴ and polypharmacy.^{3,5} A low fibre intake could not be statistically connected to constipation³ —

on the contrary, a high fibre intake was associated with faecal impaction and faecal incontinence.⁶

During research for the present study it was found that no study had been done on constipation in the elderly black population. Since it is known that the dietary fibre intake of Third-World populations is much higher than that of Western populations, but that the diet of South African blacks is becoming more westernised,⁷ the prevalence of constipation in this population group is of interest.

The aims of the study were to determine what percentage of white and black elderly people attending a polyclinic are constipated and to identify risk factors for constipation. Laxative use by the elderly was also examined.

SUBJECTS AND METHODS

The sample consisted of all people born before 1930 seen by one doctor at polyclinics at National and Pelonomi hospitals in Bloemfontein during December 1994 and January 1995.

Definitions. Constipation — frequency of bowel action of less than 3 times a week and/or stools that are hard and difficult to pass more than 25% of the time;^{3,7} recommended fibre intake — 20 - 35 grams per day;^{8,9} recommended fluid intake — more than 35 millilitres per kilogram ideal weight;^{8,10} laxatives — laxatives prescribed by doctors as well as over-the-counter preparations used by the patients; polypharmacy — use by patients of 3 or more medications simultaneously, laxatives excluded.

The questionnaire used in the study consisted of closed questions to which the participants had to answer yes or no. Questions were asked about current medications and laxatives taken as well as physical activity and bowel movements. The participants were asked whether they considered themselves to be constipated, as well as the reason for taking laxatives, if any. When asked about their bowel habits, the participants were instructed to describe these before taking laxatives.

The Hamilton Depression Scale was used to assess each patient, nursing sisters with psychiatric training acting as interpreters at Pelonomi Hospital.¹¹ The Hamilton Depression Scale¹² is a general instrument applied worldwide in various population groups, and it is used by the Department of Psychiatry at the University of the Orange Free State on black and white patients.

The dieticians of the Department of Human Nutrition studied a convenience sample of the participants. For one hour each day they evaluated fibre and fluid intake of all the patients in the study seen by the examiner during that hour. Because this could have led to bias, the sample seen by the dieticians and the main group were compared with regard to age and male/female ratio. The smaller group was demographically similar to the main group.

Finally, the participants were also asked whether they were aware of having or having had the following diseases: diabetes

PO Box 50, Klawer, 8145

P J Meiring, MB ChB, MFamMed

Department of Biostatistics, University of the Orange Free State, Bloemfontein

G Joubert, BA, MSc



mellitus, hypothyroidism, diverticular disease, irritable bowel syndrome, porphyria, depression, haemorrhoids and/or fistula *in ano*.

The data collected were analysed by the Department of Biostatistics of the University of the Orange Free State. Results are given as percentages. To investigate the association between possible risk factors and constipation, relative risks (RR) with a 95% confidence interval (CI) were calculated and chi-square or Fisher's exact tests performed.

RESULTS

Demographic profile

In total 367 people were interviewed, of whom 179 were white and 188 black. The mean age of the white participants was 75 years and that of the black participants 72 years. The male/female ratio was 3:7 for both groups.

A frequency of 3 or more bowel movements a week was reported by 81.0% of the white and 88.2% of the black participants. The prevalences of self-reported and definition-identified constipation are set out in Table I.

Table I. Self-reported v. definition-identified constipation

	White (N = 179)	Black (N = 187)
Self-reported	36.9%	48.7%
Definition-identified	29.1%	29.3%

Diseases

Only 2 white and 9 black participants had constipation as their main complaint or mentioned it as a complaint without the investigator mentioning it first. None of the diseases listed under 'Methods' could be shown to be associated with constipation, but numbers were generally very small, and no conclusion is possible.

Age

Among the black participants, respondents aged 80 years and older had a higher prevalence of constipation than those aged 65 - 69 years, 58% as opposed to 21.6% ($P < 0.01$; RR 2.60; 95% CI 1.45 - 4.69).

Medications

Table II indicates the percentages of respondents using any medication and using laxatives. No statistically significant association could be found between constipation and any of the medications taken by the participants, but numbers of patients using a specific type of medication, for example Eltroxin, Isordil and digoxin, were small. Medications were also grouped into those reported in the literature to have an association with constipation (codeine and codeine combinations, anticholinergic agents, paracetamol and calcium

Table II. Medication use

	White (N = 179)	Black (N = 187)
Any medication	96.1%	87.5%
Laxatives	43.0%	76.6%

channel blocking drugs), and those known to have constipation as a side-effect. Neither of these medication groups was associated with a higher prevalence of constipation than in participants not using the drugs.

Of white users of laxatives, 14.3% used more than one laxative, compared with 22.2% of black laxative users. The most common laxatives used were phenolphthalein in the white groups and mineral salts in the black groups. Among white respondents, laxative users were more likely to be constipated (55%) than respondents not using laxatives (10%) ($P < 0.01$). Among black respondents these figures were 32% and 23%, respectively ($P = 0.28$). No statistically significant association could be found between constipation and polypharmacy.

Stools

Table III shows the association between patients experiencing pain with defecation and constipation.

Table III. Association between patients experiencing pain with defecation and constipation (% of participants constipated)

	White	Black
Always pain during defaecation	75.0% (N = 24)*	77.8% (N = 36)
Never pain during defaecation	20.6% (N = 141)	14.3% (N = 126)
Association with constipation	$P < 0.01$ (RR 3.65; 95% CI 2.45 - 5.55)	$P < 0.01$ (RR 5.43; 95% CI 3.42 - 8.62)

*N indicates the size of the group for which the percentages were calculated.

Depression

Depression was clearly identified as a risk factor for constipation in both population groups, as shown in Table IV.

Table IV. Association between depression and constipation (% of constipated participants)

	White	Black
Minor and major depression	57.1% (N = 42)*	43.2% (N = 44)
No depression	20.4% (N = 137)	25.0% (N = 144)
Association with constipation	$P < 0.01$ (RR 2.79; 95% CI 1.83 - 4.26)	$P < 0.02$ (RR 1.73; 95% CI 1.11 - 2.69)

*N indicates the size of the group for which the percentages were calculated.



Diet

The 50 white and 58 black respondents included in the diet evaluation were compared with the total sample in respect of male/female ratio and age. In the white sample the male/female ratio was 30:70 and the mean age 75 years, while in the white main group these were 26:74 and 76 years. In the black sample and the black main group the male/female ratio and the mean age were 36:64 and 72 years and 30:70 and 72 years, respectively. It was therefore concluded that the subgroups were representative of the main groups of participants.

Results of the diet evaluation are set out in Table V. It appears that diet did not play a role as risk factor in constipation, but the small sample size makes a firm conclusion impossible.

Table V. Association between fibre and fluid intake and constipation (% of constipated participants)

	White	Black
Less than 20 g fibre/d	23.1% (N = 26)*	18.1% (N = 32)
20 - 35 fibre/d	36.4% (N = 22)	28.6% (N = 14)
Association with constipation	P = 0.31 (RR 0.64; 95% CI 0.26 - 1.55)	P = 0.47 (Fisher) (RR 0.66; 95% CI 0.22 - 1.97)
Fluid intake less than 35 ml/kg ideal weight/d	20.0% (N = 5)	22.2% (N = 18)
Fluid intake more than 35 ml/kg ideal weight/d	28.9% (N = 45)	20.0% (N = 40)
Association with constipation	No analysis due to small numbers	P = 1.0 (RR 1.11; 95% CI 0.38 - 3.22)

*N indicates the size of the group for which the percentages were calculated.

had diets higher in fibre than the black participants, confirming reports in the literature¹³ that changes in the diet of black South Africans are leading, among other things, to a much lower fibre intake than was previously the case. However, no association between fluid and fibre intake and constipation could be established.

It is interesting that depression and pain with defecation were associated with constipation.

The degree of laxative use and misuse were grounds for alarm. Laxative misuse was especially common in the black participants. It was clear that in that group laxatives were not used to relieve constipation, since the prevalence of constipation was no higher among black than among white laxative users. Some of the black participants made the remark that they used laxatives 'to clean themselves'. This is a practice that health workers must make a point of discouraging in future.

Recommendations

In addition to establishing dietary habits, health workers should ask about bowel movements in their elderly patients and assess whether any affective disorder is present. To ask whether the patient experiences pain during defecation may also be valuable in diagnosing constipation in the elderly, although this pain could be due to other conditions, such as rectal abscess.

Laxative misuse seems to be a big problem, especially in the black population. It is therefore imperative to find out what laxatives the patient is using and why.

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DISCUSSION

The study clearly indicated that there was no difference between the white and black groups with regard to prevalence of constipation (Table I).

Constipation in the elderly seems to be a much greater problem in South Africa than in the countries where the studies quoted above^{2,5} were done. A stool frequency of less than 3 times a week was reported by 0.6 - 7% of the participants in these studies, much lower figures than the 11 - 19% in the local study. Constipation was reported by 37 - 49% of participants in the local study as opposed to 16 - 36% in the quoted studies.

Participants in our study were not drawn from the general population, but from an already selected group of elderly people with a problem who had come to see a doctor. The results could only apply to the selected group and not to the population as a whole. The high prevalences of constipation may also in part be due to the way in which the information was collected.

The results in Table V indicate that the white participants