

Letter to the Editor

**CONTENT CODING OF PHARMACIST – PATIENT INTERACTIONS IN MEDICATION
COUNSELING IN MENTAL HEALTH**

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Pharmacists' role has evolved over the past 20 years resulting in a shift in pharmacists' practice from dispensing of medicines to provision of cognitive pharmaceutical services for patients [1,2], **requiring** an inter-professional approach to the provision of patient-centered care [3,4]. **Pharmacist-patient communication is an integral aspect of pharmacy services and a key vehicle through which high quality pharmaceutical care is delivered. Structured communication in community pharmacy is important for achieving desired patient outcomes, including appropriate medication use [5], and should be supported by an accurate assessment of the patient-pharmacist interaction. This Letter to the Editor is a collaboration between two universities who are studying pharmacist-patient interactions in depression care but encountered difficulty in comparing data, due to different coding, and offers a potential solution to allow for comparison of pharmacist-patient interactions globally. Therefore, the capability of a structured communication coding system, the Roter Interaction Analysis System (RIAS), to accommodate the provision of detailed content coding of key pharmacy topics through the use of content tags for medication counseling, will be discussed, using mental health as an exemplar.**

The expansion of pharmacy services for the management of chronic diseases such as diabetes [6] and hypertension [7] is established and well described. However, the role of pharmacists in the care of patients with mental illness is still evolving. As noted in several studies, patients with mental illness (such as depression) receive less attention [8,9] and less care [10,11] compared to other pharmacy patients. **Most of the studies [8-11] on this topic have relied upon pharmacists' self-reported measures of practice. Only recently, attention has been given to empirical assessment of community pharmacy practice in mental health through direct observation [12-14]. This is in line with previously reported overall lack of studies on the pharmacist-patient dyad [15]. In this regard, we strongly believe, in agreement with Shah & Chewning [15], in noting the need for further development of**

approaches that can accurately reflect the pharmacist-patient interaction. This is especially true for mental health care, due to the unique challenges in this domain.

Although there are a number of medical communication coding schemes, only a few have been used in more than a handful of studies [16]. **Since its development in the late 1970's**, RIAS has emerged **as** the most widely used **quantitative coding** system of medical interaction assessment [17], **with approximately 300 studies conducted worldwide using the method in diverse medical contexts** [18]. **However, only two of these studies have analysed pharmacist-patient interactions using RIAS** [13, 14]. RIAS provides a methodology to analyse audio or video recorded patient-health care provider interactions which have achieved high levels of coding reliability and predictive validity to visit outcomes. **The unit of analysis for coding is the smallest segment of speech to which meaning can be assigned (referred to as a complete thought or thought utterance). The thought utterances may vary in length from a single word, a simple sentence to a lengthy sentence and are sorted into mutually exclusive and exhaustive categories that reflect task-focused and socio-emotional categories of interaction** [17, 19, 20].

We would like to extend the discussion related to the **potential and suitability** of the RIAS **for analysis of** pharmacist-patient interactions raised by Cavaco & Roter [21] **and our experience in applying the RIAS to pharmacy practice** [14], by discussing the capability of the system to accommodate detailed content coding of **key pharmacy-specific** topics. **In our opinion, detailed content coding is an essential element of assessing pharmacist-patient interactions.** While the **described** content coding is based on **mental health** counseling, the **approach** is flexible enough to be applicable to all areas in which pharmacists provide medication counseling to patients.

Content coding of specific topics **is captured when using RIAS coding software** through **the use of** structured coder tags that are attached to the coding record or notes and summaries entered into the embedded text field. This approach allows the indexing of events of interest for later retrieval and targeted transcription when verbatim examples are needed, and provides a way of monitoring the completeness of performance in targeted areas. For example, it may be of interest to annotate discussions related to several aspects of therapeutic regimen counseling, including drug purpose, mechanism of action, dose, schedule, efficacy, and side effects. Other topics of interest might include the presence or absence of a particular kind of lifestyle counseling that may be relevant to the appropriate treatment.

Content-specific tags have been used in RIAS studies as a way of monitoring the completeness of performance referred to as 'proficiency checklists' **for over 20 years. For instance, this approach has been used** in the assessment of physician performance in emergency room treatment of pediatric asthma [22], in discussions of advance directives [23], and in assessment of depression screening [24]. **In those instances,** proficiency checklists **were** based on gold-standard criteria set by experts in the field or skills addressed in a communication intervention. Each element of the checklist **was** represented by a **content-tag that indicated when the** target behavior was **performed**. Once familiar with the items on the proficiency checklist, a coder **is able to apply the content tags along** with general RIAS coding.

Our recent study of pharmacist-patient interactions **about** antidepressants [14] **can be considered as a first step towards content-specific tagging in relation to depression medication counseling. To the best of our knowledge, no previous studies have illustrated the integration of content-tags to pharmacist-patient interactions using the RIAS.**

Table 1 **provides an overview of the suggested pharmacist content specific tags.** For simplicity, the examples in Table 1 **are based on** pharmacist talk; however, the categories can also be applied to patient communication.

The first **tag** “reason for use and therapeutic indications” is included as a performance indicator as previous research showed that patients want to know why a particular medication is being prescribed for them [25]. In a similar vein, the second **tag** “working-mechanism of the medication” reflects patients’ interest in knowing how the medication works, especially in terms of delayed onset of action of antidepressants, as this was rated by patients as very important information. Furthermore, **it has been suggested** that community pharmacists need to **provide this information** since physicians often fail to adequately explain how antidepressants work **to their patients** [25]. The third **tag** “use of the medication” (information on how and when to use the medication) is a key component of medication counseling in community pharmacy. The fourth **tag** “side-effects of the medication” covers questions and statements from **both** the patient **and** pharmacist regarding the experience, duration and significance of side effects. Adding this category is of great importance as previous research has shown that patients initiating antidepressant treatment **lack** concrete and practical information on side effects [25]. In addition, it is known that fear of side effects is one of the main reasons for not initiating antidepressant drug therapy while the occurrence of side effects is the main reason for discontinuing use within the first weeks of treatment [26]. The latter highlights the importance of the fifth **tag** “adherence”, which remains a major barrier to effective treatment in antidepressant therapy [27]. The sixth **tag** “addiction” covers **communication about** dependency/addiction to the medication. **Adding this tag is essential, as many patients express** a fear of physical and psychological dependency and an important information need on this issue [25]. The last **tag** ‘interactions’ includes **communication about drug** interactions between the prescribed medication and co-medication. Previous research has stated that patients want information from

the pharmacist on possible interactions with their antidepressants and concrete and practical information on medication taking in daily life [25].

(Place Table 1 here)

Figure 1 presents illustrative **RIAS** coding with content-specific tags and text notes reflecting a pharmacist-patient exchange on antidepressants. Note that the presented block in the pharmacist-patient interaction is identified as “medication discussion” (column 6) starting at 384 seconds and continuing until 564, which is a total of 180 seconds or 3 minutes (column 4 – visit seconds). This exchange began at statement 173 and ended at 202 (column 2 – statement sequence).

The first two tags in the block are pharmacist questions about therapeutic regimen (column 3 – category description), first an open question followed by a closed question, and both tags relate topically to “reason for use and therapeutic indications” (column 7). The text is captured verbatim in the note field (column 8). A third tag in the sequence is a patient disclosure (column 1) of therapeutic information (column 3) responding to the pharmacist question (see verbatim text in the notes field).

(Place Figure 1 here)

Detailed and uniform content tagging for pharmacist-patient interactions may be useful as an indicator of service quality, student performance, or training program success, **and should allow for comparisons across diverse studies and settings.** The approach **and the tags, as proposed in this Letter, relate to mental health but are** generalizable to all medication counseling **scenarios** in pharmacy **practice.** We encourage further research on pharmacist-patient **interactions using the RIAS including the tags described in this Letter and hope**

that stimulating more inquiry into pharmacy practice will lead to better communication and effective patient care.

Conflict of interest

Dr. Debra Roter is the author of the Roter Interaction Analysis System (RIAS) and holds the copyright for the system. Johns Hopkins University also has rights to enhancements of the system. Debra Roter is owner of RIASWorks LLC, a company that provides RIAS coding services to clients outside of the Johns Hopkins University System. It may be possible that the company will benefit indirectly from dissemination of the current research. The other authors declare no conflicts of interest.

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Table 1: Pharmacist content specific tags

Specified Content	Examples of Parallel RIAS Category	Examples of Pharmacist dialogue
101 Reason for use (therapeutic indications)	Pharmacist asks (open) question - therapeutic regimen	'What did the GP tell you about why you need to take these?'
	Pharmacist gives information- therapeutic regimen	'These medicines are especially helpful for people who are sensitive to '
201 Working-mechanism of the medication	Pharmacist asks (closed) question - therapeutic regimen	'Do you know how the medication works?'
	Pharmacist gives information- therapeutic regimen	'People with depression tend to have a lower amount of serotonin and the medication helps bring your level up.'
301 Use of the medication (posology and method of administration)	Pharmacist asks (closed) question - therapeutic regimen	'What time of day do you normally take the medication?'
	Pharmacist counsels medication-therapeutic regimen	'It is really important to take the medication at the same time each day –every morning, when you brush your teeth.'
401 Side-effects of the medication (undesirable effects)	Pharmacist asks (closed) question - therapeutic regimen	'Is your stomach upset even when you take your pills during dinner?'
	Pharmacist expresses concern / gives reassurance	'You might get nauseous and that can be discouraging /but most people get used to the medication and don't have a problem after the first few weeks '
501 Adherence	Pharmacist asks (open) question - therapeutic regimen	'What makes it difficult for you to take your meds on a regular schedule?'
	Pharmacist expresses concern	'I want you to check with your GP before you stop taking it – there are all kinds of problems that can arise from stopping suddenly.'
601 Addiction	Pharmacist expresses concern/	'Some people have difficulty weaning off of these pills. Sounds like you are concerned about that.'
	Pharmacist expresses empathy	
701 Interactions (interaction with other medicinal products and other forms of interaction)	Pharmacist asks (open) question - therapeutic regimen	'What other medications are you taking?'
	Pharmacist counsels medication-therapeutic regimen	'You don't want to drive for the first few hours after taking it and keep away from caffeine.'

1	Speaker 1=pharm 2=pt	Sequence#	CategoryDescription	Visit seconds	Visit segment	Blocks	Tags	Text notes
2	1	172	[?]med	380	3	0 - No Blo		
3	1	173	? thera	384	3	1-medication	101 Reason for use	What did the GP tell you about why you need to take these?
4	1	174	[?]thera	387	3	1-medication	101 Reason for use	Did he answer explain why?
5	2	175	GIVES-thera	392	3	1-medication	101 Reason for use	He just told me that it would help me get better.
6	1	176	agree	394	3	1-medication	---	
7	2	177	agree	398	3	1-medication	---	
8	1	178	orient	411	3	1-medication	---	
9	1	179	orient	425	3	1-medication	---	
10	1	180	orient	432	3	1-medication	---	
11	2	181	concern	452	3	1-medication	401 Side Effects	You might get nauseous and I know that can be discouraging
12	2	182	reassurance	457	3	1-medication	401 Side Effects	Most people get used to it and don't have a problem after the first few weeks
13	1	183	check	459	3	1-medication	---	
14	2	184	agree	460	3	1-medication	---	
15	1	185	[?]thera	460	3	1-medication	---	
16	2	186	GIVES-thera	462	3	1-medication	201 Working Mech	I heard that these pills can change your mood.
17	1	187	[?]thera	466	3	1-medication	201 Working Mech	Do you know how these types of medication work?
18	2	188	GIVES-thera	468	3	1-medication	---	
19	1	189	BC	470	3	1-medication	---	
20	1	190	GIVES-thera	472	3	1-medication	201 Working Mech	People with depression have lower serotonin levels and the meds bring the level up.'
21	1	191	BC	474	3	1-medication	---	
22	2	192	GIVES-ps	477	3	1-medication	---	
23	1	193	? thera	479	3	1-medication	701 Interactions	What other medications are you taking?
24	2	194	GIVES-thera	479	3	1-medication	---	
25	1	195	GIVES-thera	479	3	1-medication	701 Interactions	You don't want to drive for the first few hours after taking it
26	1	196	legitimation	479	3	1-medication	601 Addiction	It is common to worry about getting too dependent on these drugs
27	1	197	reassurance	482	3	1-medication	401 Side Effects	This medication really has a good track record in terms of side effects
28	1	198	orient	485	3	1-medication	---	
29	1	199	check	486	3	1-medication	601 Addiction	Did I hear you say you had a problem with this medication in the past?
30	2	200	agree	488	3	1-medication	---	
31	1	201	orient	488	3	1-medication	501 Adherence	Lets talk for a few minutes about when and how you take the meds
32	1	202	? thera	564	4	1-medication	501 Adherence	What makes it difficult for you to take your meds on a regular schedule?

Figure 1: Illustrative coding with content-specific tags and text notes